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NATURE AND ORNAMENT

NATURE
THE RAW MATERIAL OF DESIGN

BY

LEWIS F. DAY

AUTHOR OF PATTERN DESIGN
ORNAMENT & ITS APPLICATION
LETTERING IN ORNAMENT
WINDOWS, ENAMELLING, &c.

WITH AN ADDITIONAL CHAPTER

BY

MARY HOGARTH

SECOND EDITION, REVISED

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NOTE TO SECOND EDITION

By request of Mrs Lewis F. Day, who, alas, has not lived to see the book appear, Chapter XII. of the first edition has been replaced by a new chapter dealing with the trend of design since the Great War. Some new illustrations have been added to the text in the earlier part of the book, which it is hoped will be of use to the student of design. For permission to publish these and illustrations to the new chapter, I have to thank Sir Frederic Kenyon, Director of the British Museum, the authorities of the Victoria and Albert Museum, the Editor of the *Architectural Review*, Messrs Charles Scribner's Sons for the sketches by Hugh Ferris from Edgell's "American Architecture of To-day", and the *Illustrated London News* for the reproduction of the "Inlay Work from Ur".

MARY HOGARTH.

November 1929.

PREFACE

THE special purpose of this volume is to illustrate as fully as possible the decorative and ornamental character of natural growth, and its infinite suggestiveness, as the starting point in design.

There will be found among its illustrations many details of plant growth which can hardly fail to be of use to the designer in his work; but their aim is not to do for him what he can only do for himself. To make sure of studies that will serve his individual turn an artist must make his own drawings. No one else can do more than fill gaps in them. The studies Miss Foord has made at my dictation are only samples of what is easily to be discovered by those who look for it. Their object is (1) to indicate the fullness and variety of suggestion everywhere in nature; (2) to show the kind of nature study which is most helpful towards design; (3) to call attention to sources of inspiration which have not been drawn upon by the designer as they might be; and (4) by showing the use that has already been made of natural growth and detail, to point the way to new and personal forms of ornament equally derived from nature.

Miss Foord's drawings are so many plain and definite, although most sympathetic, statements of fact, carefully observed, and meant to set others observing. They should be all the more useful in that they are drawn not only with exact knowledge of plant form, but with constant reference to what is available for the purposes of ornamental design.

My thanks are due to Miss Newill and to Mr Cross for the use of their drawings.

LEWIS F. DAY.

15 TAVITON STREET,
LONDON, W.C.,
October 1908.

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2. DETAILS of painted ornament on Greek vases. Ivy and olive conspicuous: bay also recognisable. Scant regard is anywhere paid to the natural growth of the plant.

3. DETAILS of Gothic carving. The leafage would be unrecognisable but for the haws, acorn cups, seed vessels, or grapes (such as they are) which show that the carver meant it for hawthorn, oak, maple, or vine.

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6. HOLLY TREES. The clean growth of the trunks is characteristic. The branches, though drawn with sincerest regard for nature, come very near to making absolute pattern. From a pen drawing by Miss Mary Newill.

7. SCOTCH FIR. The tree trunk (bark and all) is faithfully rendered. The rugged branches and starry needle-clusters together go very near to making ornament. From a pen drawing by Miss Mary Newill.

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22. THISTLE. The leaf does not begin where it departs from the stem, but at the point where the next leaf under it juts out. That is how the stem gets its prickly clothing.

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24. COW-PARSNIP. The fluted stalks are interrupted by the exaggerated leaf bases. They form quite a sheath which masks the branching of the stem. So the Greeks masked the branching of their spiral scroll.

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27. WINGED STEM, *Acacia alata*.

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43. Flower Shapes. The difference in the number and shape of the petals. The decorative value of the sepals, of the stamens, and of the pistil. The growing together of the petals.

44. Pinks. Feathery petalled (there is an Alpine variety in which the petals are quite fluffy). The fan-shape of the opening flower in profile is quite a feature in Oriental ornament. Note the two curling horns of the pistil.

45. Nettles in flower. The hanging tassels of the stinging nettle; the rings of labiate flowers which make so many crowns round the stem of the white nettle; and the clusters of empty husks below from which the flowers have fallen. Comp. Salvia, 71.

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47. Teasel and Plantain. In the teasel the flowerets form distinct rings of lilac round the head. In the plantain the stamens emerge in turn from successive rings of the inconspicuous flowers, and so seem to creep gradually up from the base to the top of the spike. Note the prickly stem of the teasel and the iron-like character of the spiked fencing of the flower-head.

48. Bud Shapes. The prominent bracts give character to the *Cobæa scandens*, convolvulus, and passion-flower buds. The envelope of the poppy and eschscholtzia bud is seen for a while like a cap upon it, gradually to be pushed off as it opens. The twist of the phlox petals is characteristic.

49. Bud Shapes. For the most part the sepals or bracts are a feature. Comp. the campion with the cowslip, the goat's-beard with the corncockle, 43.

50. Onion Buds bursting from their sheath.

51. Apple Blossoms—white flowers embosomed each in pink buds, themselves nestling in green leaves.

52. Seed Vessels. In the hedge-mustard they clothe the flower stalk; in the watercress they shoot out from it. The seeds of the shepherd's purse justify its name. Those of the *biscutella* account for a pattern often painted on Greek vases.

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55. Seed Vessels—to show typical differences of shape in them.

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57. Pods.

58. Nuts and Catkins. The rough husk of the beech-nut is smooth and silver-lined. The green wrapping of the hazel nut invites ornamental development. The little flowers of the catkins make a sort of repeating pattern.

59. Oak—showing variety not only in the leaf and in the acorn (especially in the cup), but in the way the acorns grow—sometimes on long stalks, sometimes close to the stem. Empty acorn cups give variety. Tiny acorns at the end of the stalk never get beyond that stage of development. The round galls look like another kind of fruit upon the tree.

60. WINGED SEED VESSELS. The angle at which the wings are set makes all the difference between sycamore and maple.

61. FEATHERY SEED HEADS. Comp. with Clematis, 55.

62. BERRIES—showing their different shapes, and how differently they grow. Note the different thorns of rose, hawthorn, and barberry.

63. BERRIES, &c. The arbutus, like the snowberry (62), is in flower and fruit at the same time—so are the strawberry and the blackberry. Note the thorn, which brings the branches of the sloe to a sharp point.

64. FRUITS. In the medlar the sepals crown the fruit, in the tomato they form a base for it.

64*a* and 64*b*. MEDLAR and CLOVER. From sixteenth-century water-colours. V. and A. M.

64*c* and 64*d*. MICHAELMAS DAISY and TORENIA. From nineteenth-century water-colours. V. and A. M.

65. POPLAR LEAVES, their flat stalks curiously cankered.

66. POPPY HEADS of various shapes. One pecked by opium-eating tits, until it suggests the barred visor of a late heraldic helmet. The little openings under the projecting eaves of the flat cover (through which the seeds are naturally shed) make quite a pattern under it, and the edge sometimes a sort of cresting.

67. JAPANESE rendering of leaves. The face of them in solid black, veined with white, the back in outline, with black veins. Miss Foord has adopted this very useful convention in some of her drawings (20, 22, 34, 40, 52, &c.).

68. WHITE BRYONY. Its natural growth, together with details of buds, flowers, &c. The berries vary in colour from apple-green to crimson. Comp. Tendrils, 36.

69. HELLEBORE—the green flowers distinguished from leaves rather by their broad masses than by colour. Note the gradual development of pistil into full seed vessel.

70. GOOSE GRASS. Tiny flowers at the base of the radiating leaves.

71. SALVIA—a spike of flowers none too formal. The husks of fallen flowers make a pattern on the lower stalk. Comp. 45.

72. BRIAR ROSE—with details showing progression of the flower from bud to fruit.

73. GARDEN ROSES. These owe so much of their charm to delicacy of colour, that it seems almost impossible to render them satisfactorily in line.

74. FLOWERS which have every appearance of growing on the leaf. In the *Claytonia* the leaf out of which they seem to grow is really the fusion of two leaves (comp. Honeysuckle, 25, and Spurge, 26). In the butcher's broom, what looks like a leaf is a flattened branch of the stem—a fact more credible when it is compared with the larger *Ruscus hypoglossum*, where the real leaf (not yet fallen away) stands up in the middle of the larger leaf-like feature.

75. YOUNG GROWTH of the sunflower.

76. FRITILLARIES.

77. HORSE-CHESTNUT twig. The scars of fallen leaves make pattern. From a drawing by Mr Wm. Cross, which, though made for botanical purposes, is just about the kind of study a designer would find useful. Comp. 8.

78. IRISES. The straight growth of the flag, *b*, is distinctly in the direction of ornament.

79. INLAY WORK from Ur, 3500 B.C.

80. SKETCHES OF SKY-SCRAPER DESIGNS, by Hugh Ferris.

81. ROOM designed by E. J. Rühlmann.

I. WHAT ORNAMENT IS

WE all love nature; who could help it? and lovers of nature will maintain that the most beautiful forms are those taken directly from natural objects. They go so far as to say that forms not directly taken from natural objects must be ugly. Ruskin has given the weight of his authority to this contention—reducing the theory to something very much like absurdity, when he declares the forms most frequent in nature to be the most natural, and the most natural to be the most beautiful. He finds the abstract ornament on a Greek moulding beautiful only because it is built up of egg shapes, and he will condone the flattening of the egg only because that brings it to something like a pebble on the beach. He will have none of the Greek fret, because he knows of no such forms anywhere in nature except in the crystals of bismuth.

It wants only the faintest appreciation of ornament to tell us that considerations of this sort do not in the least affect its beauty. Nothing was further from the mind of the Greek sculptor than pebbles on the shore when he flattened the so-called egg shapes in his running pattern. His one thought was to preserve the profile of his moulding—itself a quite arbitrary feature of architectural design.

It may be argued, no doubt, that, far as ornament may stray from natural form, it is ultimately derived from it, and that all we pride ourselves upon inventing is more or less remembered. But to make likeness to natural objects the

test of beauty in ornament, is to deny to man the very faculty of design. It is rather remarkable that anyone with Ruskin's love of art, and his keen insight into some phases of it, should have been so blind to the very nature of ornament. He was, for all his love of art, a naturalist. He was keenly alive to the sentiment of ornament, ready indeed to see into it something which the artist never thought of; but there is nothing in all his writings to show that he cared for it (apart from what it *meant* to him) or appreciated the cunning of the craftsman in the direction of his particular art.

Let me anticipate another shot from the stronghold of sentiment. William Morris also professed to think nothing of ornament which did not tell a story or call up memories of nature; and Morris speaks on this subject with the authority of a practical designer, to which Ruskin has no claim. No one doubts his sincerity. He spoke as he felt. But when it came to designing he was better than his word. It was always a hint from nature which set him going; but the way he departed from nature (not from natural detail merely, but from natural growth) shows that, when once he got to work, he lost sight of nature, and kept always in view the problem of design. At least he designed patterns, and beautiful patterns, which no one would ever have known to represent the flowers he named them by—as when he gave us cup-shaped flowers with acanthus-like foliage, and called them tulips. This is not by way of criticism upon Morris's design—he was a master of his craft—but to show how, though nature may have been his starting-point, his end was ornament. If he had really meant to make a tulip he would have made it grow like a tulip, with leaves like a tulip, or at least like enough to be recognised.

We misinterpret the frank utterance of men who speak, as Morris did, on impulse. "Art is everything," says one of us, taking it for granted that the artist has got something

to say. "Truth to nature is all that matters," says another, assuming that an artist will, of course, express it in the terms of art. Both mean much about the same thing. Morris never said that adherence to natural form made amends for ill-considered ornament. As poet he said, very likely, more than as artist he could have defended. In his work he showed himself preoccupied with ornament, and with nature only in so far as it served the purpose of ornament.

It would be difficult to get together a collection of really beautiful ornament which did not contradict the assertion that the beauty of it was in proportion to its faithful adherence to natural form. It happens perhaps more often that perfect design is very far removed indeed from any direct imitation of nature. But Owen Jones overstated his case also, when he went so far as to say that, in proportion as design approached natural form, it has less claim on us as ornament. His contention just about balances that of the naturalists. The truth lies midway between the two extremes —precisely at what point artists must discover for themselves: no critic can tell them.

And what is the word of the greatest of critics against the life-work of the masters? What if Ruskin is against ornament as such? What if the words of Morris may be quoted against mere ornament? His *work* appeals to us as ornament, and not for the meaning in it. In that he is with the designers of all times and of all countries. His words may be the expression of a mood rather than a conviction; the doctrine of his art there is no mistaking.

From first to last the witness of ornament is, that nature plays a secondary, sometimes an obscure, part in ornamental design; that its beauty is in proportion to its fulfilment of conditions which have little or nothing to do with nature.

Satisfactory ornament grows out of circumstances—as it were naturally. That is where nature comes in. It is deter-

mined by the work in hand, by its place, by its purpose, by the material and the method employed in working it—to say nothing of the personal element. If work fulfilling plainly its condition does not appeal to popular liking as a transcript from nature would, that only shows the love of nature to be (as it is) universal, and the appreciation of art to be exceptional—much as it may flatter us to think otherwise.

We all assume a taste for art, though we have it not. The bias of the natural man is all in the direction of nature. So far is the ordinary Englishman from sympathy with ornament that he has in his heart a sort of contempt for it, as being something opposed to that utility which he puts before everything. He has not given thought enough to the subject to realise that ornamental art is art applied to some purpose, as often as not a useful one. To him, as to Ruskin, the forms of ornament most to be admired are those which come nearest to nature—and it is because of that he admires them. The beauty, the character, the fitness of abstract ornament do not appeal to him; he is perplexed to know what it represents. It is not until he sees in Greek ornament some fancied likeness to the honeysuckle that he begins to take any interest in it.

The truth is, the natural Briton is not constitutionally an artist, still less an ornamentist. The folk who put nature before art are lovers of nature, not of art, and, artistically speaking, their unregenerate liking for natural ornament is a species of original sin.

No real lover of ornament will allow that the element of natural form is necessary to good ornament, or that ornament is good in proportion to its resemblance to something in nature. Natural form lends itself, indeed, to ornament only in proportion as it is reduced to submission, subjected to "treatment" which amounts in some cases to complete denaturalisation.

So far as ornament is concerned, Whistler was not so far wrong. "Nature *is* very seldom right"—that is to say, just what the designer wants. The best ornament is, much of it, so far removed from nature as to be what is called "abstract."

This much it is necessary to say, in answer to the pretension that ornament is summed up in natural form. The way in which ornament is derived from nature, and natural form is reduced to ornament, it is the object of this book to show.

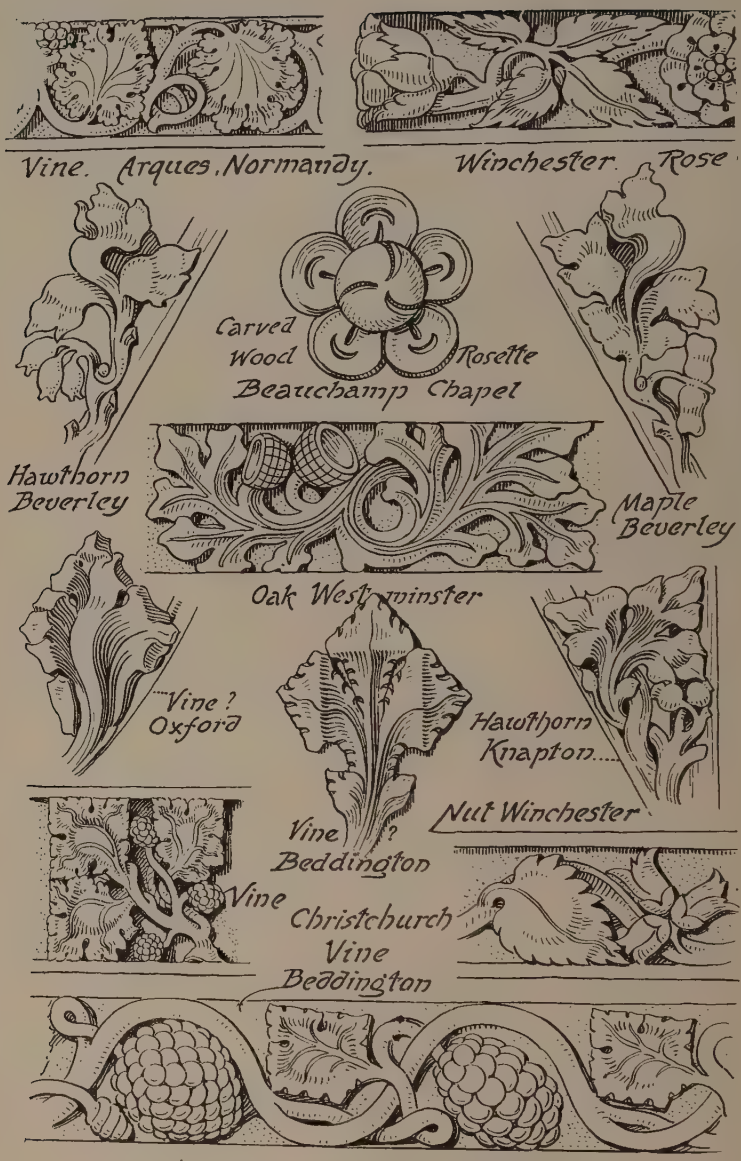
1. OAK TREES—PORTION OF A PEN DRAWING BY MISS MARY NEWILL.

II. TREES

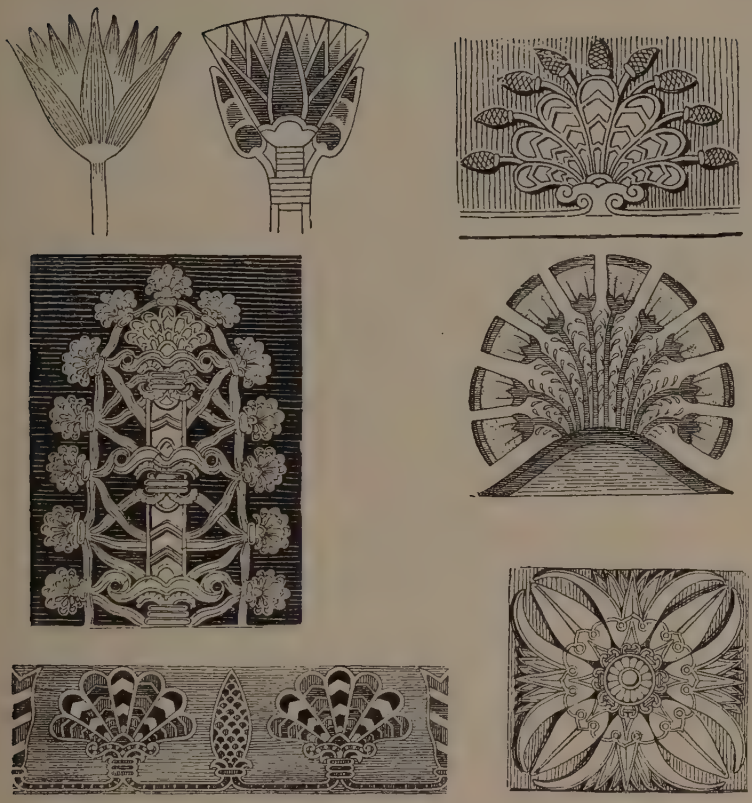
It is strange to think how, with the world at large to choose from—the woods, the fields, the mountain slopes, garden, orchard, and wayside—artists have gone on reflecting in their ornamental design reflections of reflections. It is as though they dared not face the direct light of nature.

The types which, for all the never-ending variety of natural detail before their eyes, sufficed for the ancient and mediæval world, and the modern too, for that matter, are, comparatively speaking, few. The mention of Egyptian and Assyrian ornament suggests at once the papyrus plant, the lotus, and the palm (4). Greek scrollwork (and Roman after it) relies upon acanthus foliage for its clothing; and in Classic ornament of a lighter kind we meet little foliage but that of the vine, the olive, and the ivy (2), which also sufficed in the main for their imitators of the Italian Renaissance. Gothic art began to go further afield,

2. DETAILS OF GREEK ORNAMENT.



3. DETAILS OF GOTHIC FOLIAGE.



4. DETAILS OF SYMBOLIC EGYPTIAN AND ASSYRIAN ORNAMENT.

gathering into its posy the lily and the rose, acclimatising the pomegranate, making the trefoil its own, and turning to good use the oak, the maple, and other leafage (3), but still only a comparatively small selection of the plants a-growing and a-blowing within sight of the village church. In Persian ornament certain familiar garden flowers occur over and over again—the pink, the iris and the hyacinth,

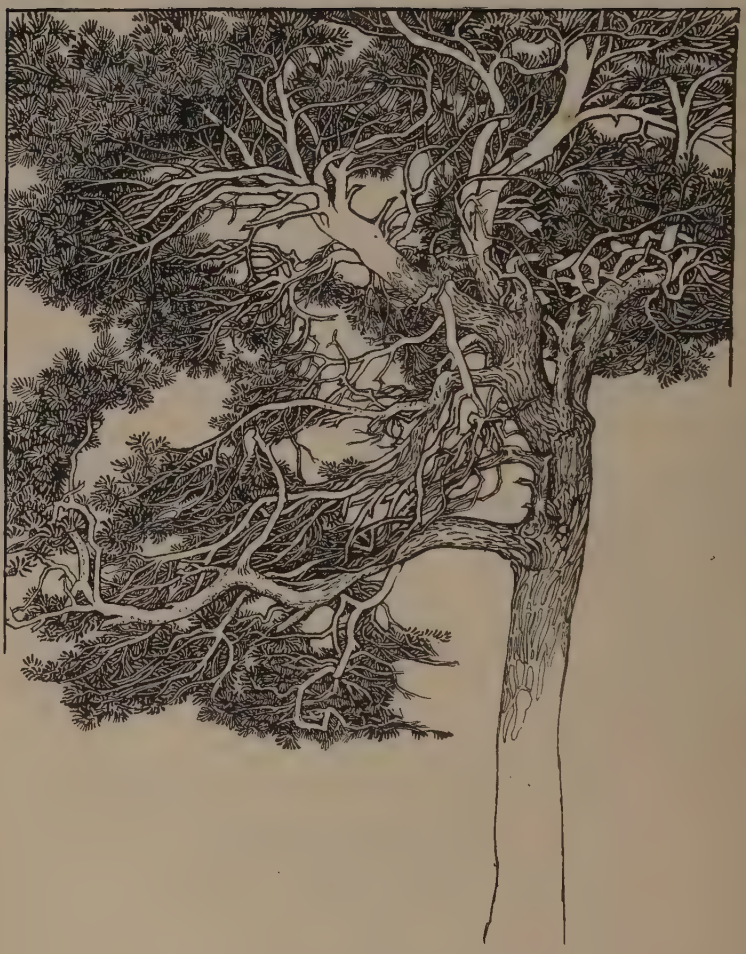
the rose and the marigold (5). In Chinese, the aster and the peony predominate. As for Japanese art, we should hardly know it without the peach and cherry blossom, the chrysanthemum and the bamboo.

There may be ample reasons of sentiment or symbolism for whatever we find in ancient art, but it is sentiment that in most cases hardly appeals to us nowadays; and yet we go on using the plants familiar to us in the design of the past, as though there were not everywhere about us an untold wealth of ornament wasting its suggestiveness upon our careless eyes.

5. PERSIAN ORNAMENT.

Nature seems to have neglected no opportunity for ornament. Think of the trees in winter, and the pattern of the twigs against the sky; how the naked branches spread out into the semblance of huge seaweeds in still water. To see them rimed with frost, or after a fresh fall of snow, is a new revelation of their beauty. In spring, when the branches begin to burgeon and to glow with colour, they look more than ever like seaweeds. And individual buds, when you get near enough to distinguish them, have always a character and beauty of their own: the beech buds, for example, folded tight in pointed sheaths, the rounder buds of the lime, and the bronze-black buds of the ash, presently to grow full and fat, and then to reveal pale sprays of feathery blossom. So,

6. HOLLY TREES, BY MISS MARY NEWILL.



7. SCOTCH FIR, BY MISS MARY NEWILL.

too, the rowan and the sycamore disclose, as their leaf buds open, incipient flower bunches, grey or green. The variety and character in leaf buds is endless. There is a kind of Virginian creeper in which they look like little crimson claws clutching the wall.

And what a difference in the stems and branches of the trees—the beech, planting its toes firmly on the ground; the olive, splitting asunder at its base as though the ground had given way under it; the straight larch, seen mistily through a rain of dead branches veiling it; the fruit trees, nailed, like monstrous many-legged spiders, against the wall, and spreading later into huge fans of coloured blossom. The long branches of the wistaria, twisting about as easily as if they were whip lashes, which, when they are young and slender, they somewhat resemble—that is the excuse for the church embroiderer who has rendered them very much as if they were tendrils. The crooked growth of the furze bushes and of the heather, whose bare branches look at times like brown snakes wriggling in the sand underfoot. Compare the holly trunks in Miss Newill's drawing (6)—they look as if you could stroke them—with the gnarled branches of the Scotch fir (7), which belong so absolutely to the harsh but starry needles. Look again at the oak branches (1)—they are only part of another pen-drawing by the same artist—and see how nearly they come to making pattern, though they are only straightforward drawings from nature, done without any idea of design, except that the artist has the insight to see the ornament in nature, and the sympathy to render it in the way she has done.

What difference there is in the clothing of the trunk or stem. The feet of the fir trees, feathered with green moss; the beech, so clean and straight, only here and there a crooked one on which the moss can find foothold, the younger ones brocaded with little shoots of foliage; the rugged elm trunk

8. STEMS WITH THORNS AND SCARS.

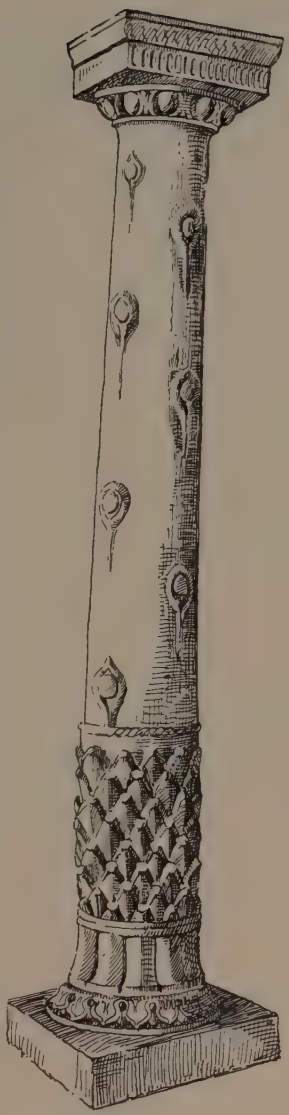
similarly tufted with young green; the fig tree, with its bark fitting like a glove, and, in contrast to this clean growth, the thorn, ragged with lichen; the hairy sumach; the ivy, furred with would-be roots, until it looks like some huge hairy caterpillar climbing up; the birch bark, streaked across like a stocking, or bursting itself in the effort to look like the hide of a crocodile; the plane, mottled with light where it has shed its bark in patches; the crisp and vigorous branches of the young vine, becoming characteristically knobby after years of pruning, and in old age getting ragged and dishevelled—just as the honeysuckle ceases after a time to be trim and tidy, and wears a suit of bast which is little short of disreputable.

The men whose work we imitate observed such things, if not all of them. They did not imagine everything. Folk are

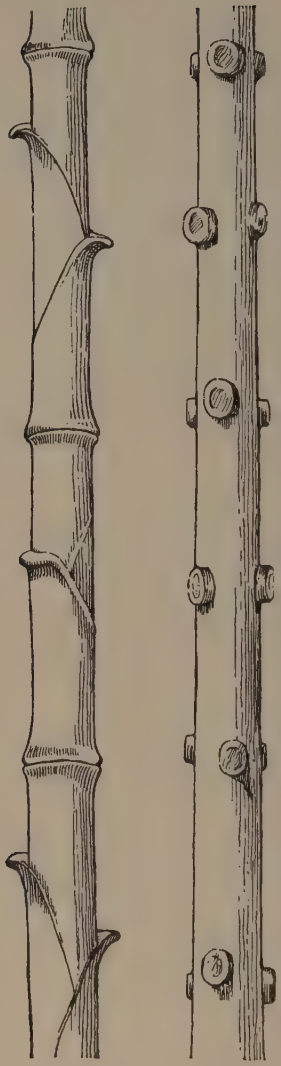
rather too ready to dismiss as convention anything with which they are not familiar in nature. As a matter of fact, we often observe for the first time in art what had escaped our notice in nature. Our personal outlook is apt to be narrow.

The trees of Perugino and the primitives — how conventional! Those graceful sprays of foliage spring up more like the jets of a fountain than the sturdy growth of trees as we think of them. But trees do grow like that in Umbria to this day; and, having seen them in Italy, we recognise something of the same kind in our English landscape—where, for example, from the black poll of a pollard willow sprouts out a fountain of fresh green. So with the impossible distances in Dürer's landscapes: you may still see something of the kind at Le Puy; so, too, the green-blue skies of Veronese and the purple hills of Titian exist on their side of the Alps.

These things are not spun out of the artist's imagination; they are transfigured by it, and probably in no case are they so far removed from nature as we think. The very scars left by the fallen leaf stalk on the horse-chestnut twig (8) make a kind of decoration, and in the same way the naked stalk of the giant spurge



9. ROMAN COLUMN.

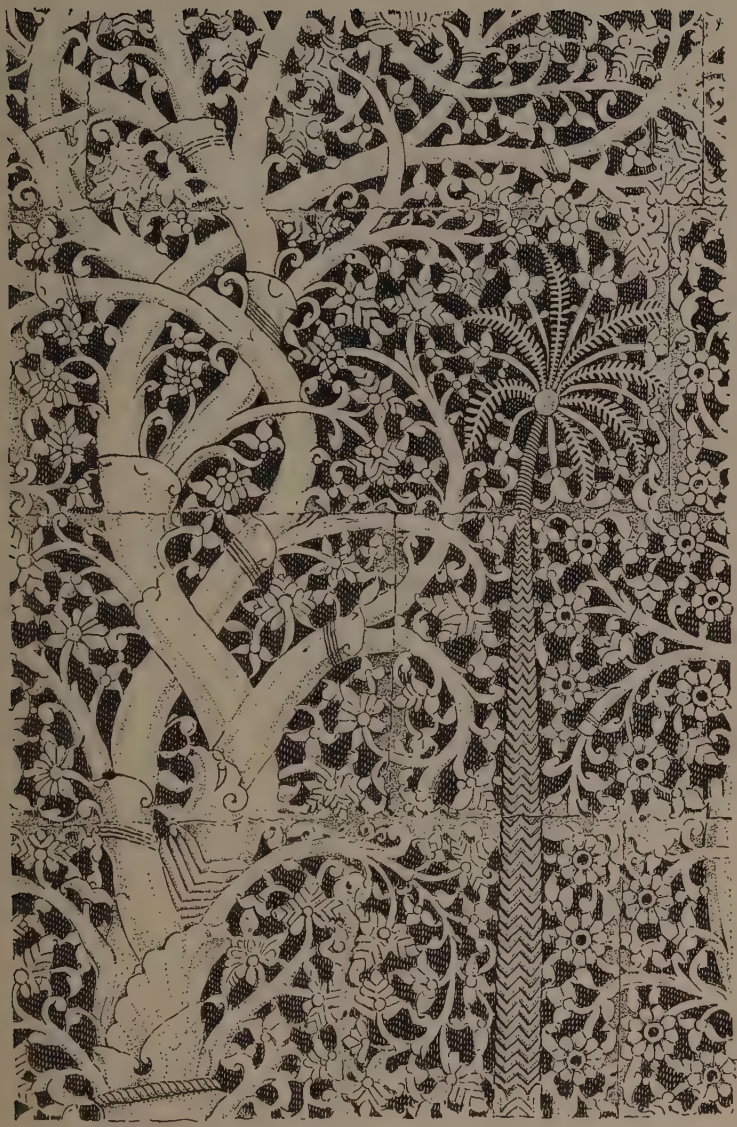


10 11

SHAFTS OF ROMAN CANDELABRA.

is patterned with the black scars of fallen leaf stalks. In the scarred stalk of an old cabbage we get characteristic pattern, and again in the palm trunk where the leaves of years past have been cut off. That is as plainly the source of the decoration on the base of the Roman column (9), as it is certain that the pattern above it stands for the record of branches on a tree trunk; and it is no great strain upon the fancy to imagine a similar origin for the zigzag lines which form such characteristic decoration upon the columns of Norman architecture. The Indian rendering of the palm (12) leaves no doubt as to the origin of the zigzag pattern on the tree trunk. In the shaft of a Roman candelabrum (11) the ornament is once more suggested by truncated branches, and a similar reference to nature is observable in another candelabrum (10). There the bronze-worker clearly went to the reeds by the river side for inspiration. Again, in certain Gothic tracery there can be no doubt as to the idea of branches in the mind of the sculptor (14). Indeed it is not too much to say that, but for the branching of trees overhead, there would never have been such a thing as Gothic tracery.

In the very section of the

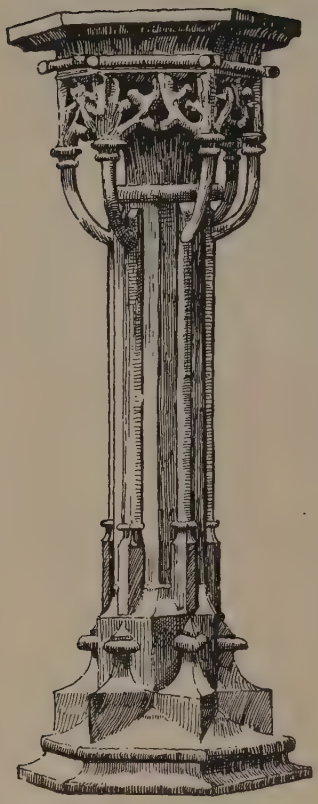


12. INDIAN ORNAMENT.

stalk, round or flattened, three-sided, four-sided, five-sided, grooved, jointed, spiked, or twisted, there is more than a hint to designers. The bean stalk is full of character (13).

Nature is always and everywhere suggestive. Everything makes ornament to eyes that can see it. The flower beds are a pattern sheet of design, and the kitchen garden hardly less so. The scarlet runner is worthy to be compared with the geranium; the green artichoke and the purplish seakale with the acanthus; the rhubarb with many garden plants cultivated solely for their leafage; feathery carrot

13. BROAD BEAN.



14. GOTHIC PEDESTAL.

and curly parsley with fern fronds. Then there is the asparagus with its jewel-like berries, and the equally delicate fennel with its beautifully sheathed stem; the trailing cucumber and marrow, the horse-radish with its crisply waved leaves, the onion with its starry flowers and round seed ball, the vari-formed fruit of the tomato; on the garden wall is a very cresting of wall flowers; let the lettuce and the cabbage only run to seed, and they too are suggestive of ornament.

In the fields, again, it is not only the tares and poppies in the corn, or the pimpernels in the stubble, that are food for design, but the corn itself, the bearded barley, the grasses in the hayfield, the glistening beet leaves with their pronounced mid-rib, the trellised hops, and, if we cross the Channel, the delicate flax blossom, the pointed fingered hemp, the blue-flowered chicory, the trumpet-flowered tobacco, and forests of Indian corn waving tall aigrettes of blossom in the wind.

The very railway cuttings, which have an ill name for beauty, are gorgeous in turn with gorse and broom and ox-eye daisies, to say nothing of cowslips and primroses in the earlier spring.

In the woods you walk upon a carpet of starry moss, or bright beech leaves, or brown fir needles; the sandy path

is patterned with the exposed roots of the pines, or with a conglomerate of quartz atoms that might conceivably have given the first hint of a mosaic floor. The peaty black road is diapered in autumn with kite-shaped yellow poplar leaves. In winter the pattern of each separate spider's web defines itself in strings of fairy pearls; the twigs are furred with crystals, and the leaves are softly outlined in white rime. Observe the snow crystals (15) through the microscope and you have the most delicate of radiating patterns.

15. SNOW CRYSTALS, MAGNIFIED.

Seaweeds on the shore provide the designer with quite a new plan of growth, in which the forked branches are always two-pronged, as in the mistletoe. In other lower forms of vegetation, such as lichen and fungi, there is the material of ornamental design—for those who can use it.

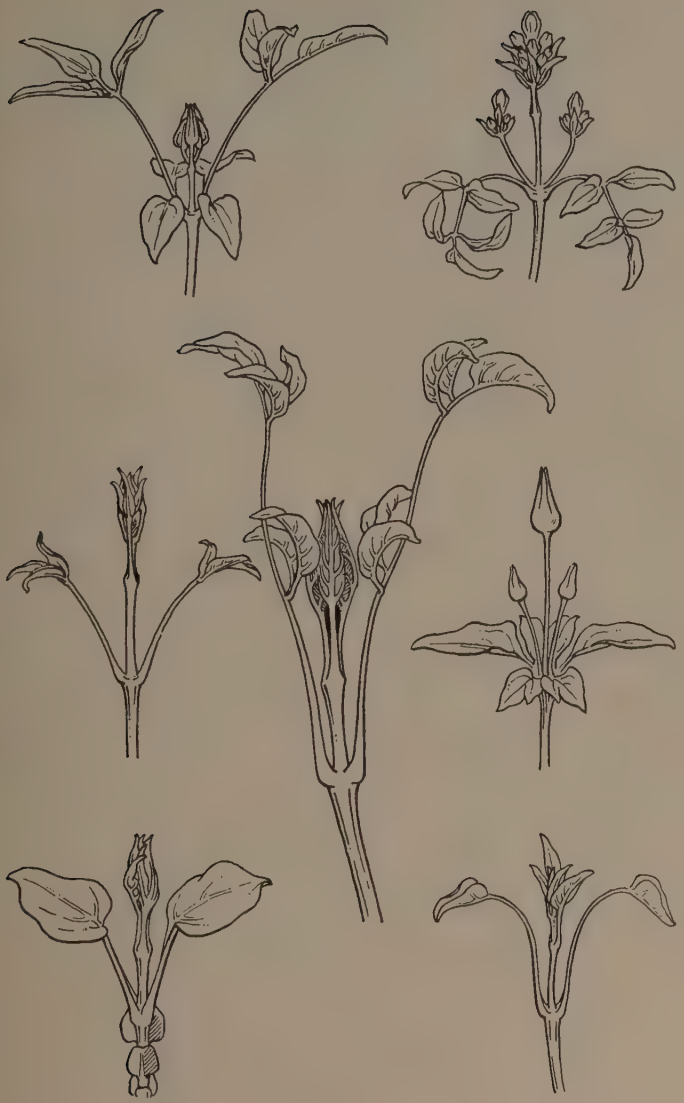
III. STALKS

ONE of the problems of the designer is to enrich the main stem of his ornament. We see in ornament the natural source of such enrichment as the ancients devised, but we may see in nature also innumerable suggestions for enriching it in a way that, if it has been done, has not been done until it becomes tedious.

How variously nature decorates the stalk—with thorns, with hairs, with ribs, with spots, with scars (8), with miniature frillings of green leafage breaking, for example, the deep red of the meadowsweet (21).

It is astonishing how little use has been made of thorns in ornament, except perhaps in the case of the rose; and there how often it has escaped the attention of the designer that the thorns, like those of the bramble, point backwards so as, in fact, to grip fast in climbing. How many people are there who remember that the orange has thorns? (28). A typical variety of the thorn is the woody spike of the blackberry (63) and the acacia—the last in some varieties many inches long. The colour of the thorn, bright red on a green briar shoot, adds to its value in ornament. The hairs upon the stalk of a flower, on the stinging nettle for example, are not always to be rendered; but sometimes, as in the borage and the poppy (19), the stalk would lose a good deal of its character by their omission.

Leaf buds, too, are always a feature on the twigs, diversifying the outline, giving perhaps points of colour that relieve its mass, and, when the leaves are fully



16. CLEMATIS—THE END OF THE SHOOT—FINIALS.

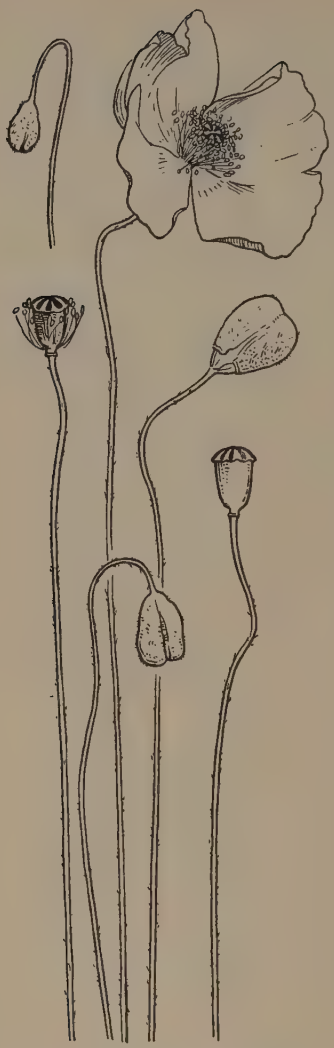
17. DOGWOOD—WITH ITS CHARACTERISTIC TERMINAL BUDS.

developed, conveniently softening the angle at which the leaf stalk joins it, eventually indeed filling up the space between. They give such character to the stem that it is difficult to understand how commonly a single formula has been adopted for the bud in ornament—when it has been used at all—and how exclusively designers have relied on leaf and fruit and flower for ornament.

There are plants that are never so beautiful as in their unfolding—think of the bracken as it pushes its way up and begins to open its finger-clusters scorched with gold; or of the male fern, its spirals at first a bishop's crook, and then developing into something sinuous and prehensile-looking, somehow suggesting in miniature the trunk of an elephant. Watch the unfolding of the terminal leaf buds of the clematis (16), or the dogwood (17), or a dozen other shrubs in the hedgerows, and you have the hint of so many designs for finials.

There is something characteristic always in the line of a flower stalk. Look at the poppies in the corn (19). Scarce one of them ever gets over the crick in the neck which comes of hanging down its heavy head so long in the bud state. There is

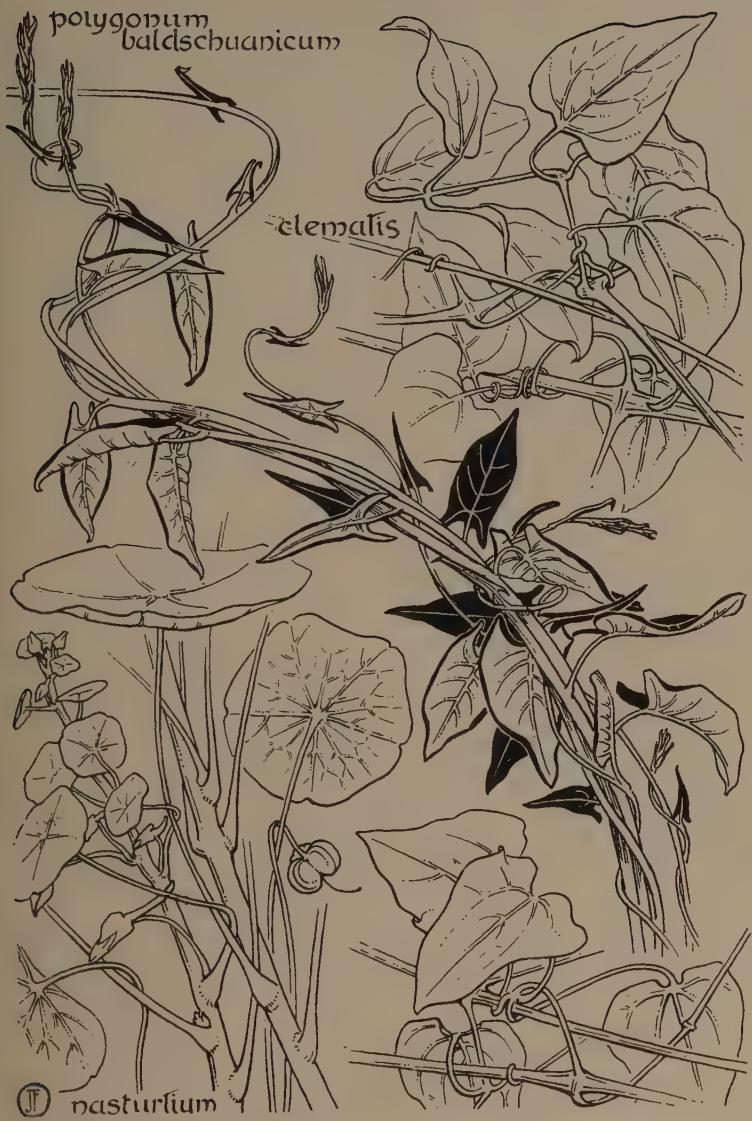
18. HOP.



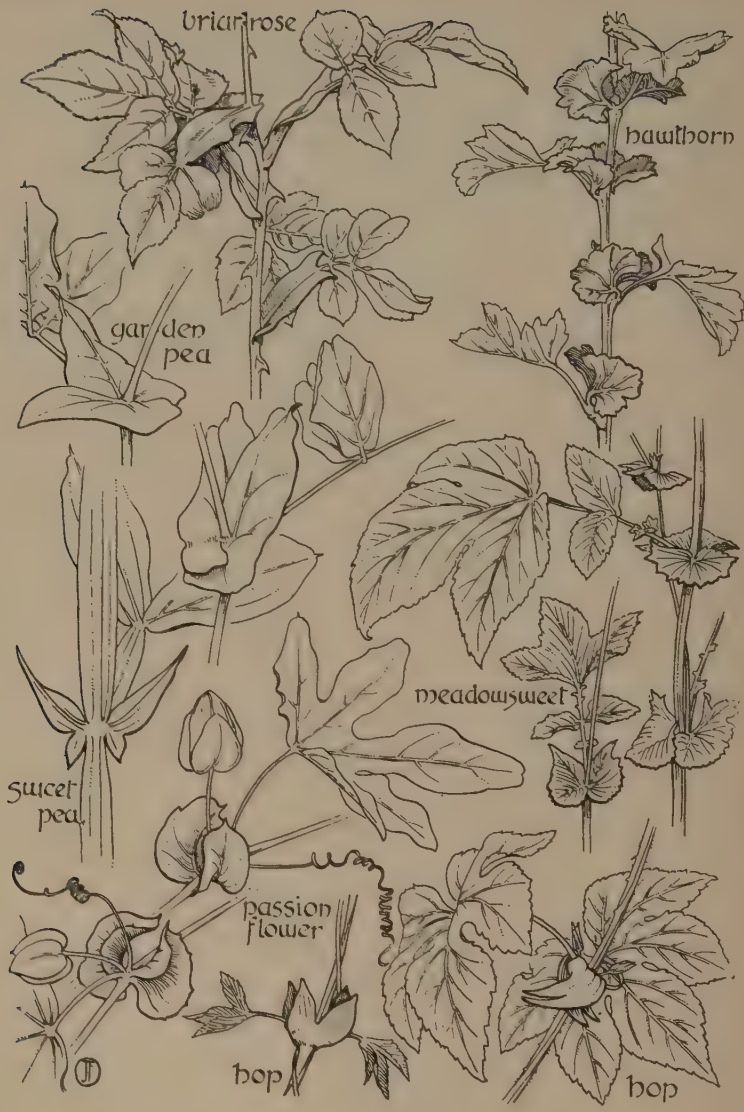
19. FIELD POPPY, SHOWING BREAK IN THE STEM.

always a tell-tale nick in the stalk of the full-blown flower, hidden it may be by drooping petals, but plainly to be seen when they have dropped off and the seed urn is left naked. It does not stand up straight and stiff like a barrel on a pole, but is poised with a subtlety characteristic always of the natural as distinguished from the mechanical line; and I have seen hardy-looking crown imperials, crushed down by a heavy fall of snow, recovered and flourishing with all their vigour, but with a chronic bend in the neck to tell the story of their downfall.

Another point most suggestive of ornamental use, but seldom observed by the ornamentist, is the way that plants like the clematis and the nasturtium (20) bend their leaves sharply back and hook themselves on by their wiry leaf stalks to whatever they can catch hold of. Then there is a whole class of plants, like the hop (18), the *Polygonum baldschuanicum* (20), and the convolvulus, which combine to climb—whence, of course,



20. CLIMBING PLANTS, ATTACHING THEMSELVES BY THE LEAF STALK OR BY TWINING.


briarrose
hawthorn
garden pea
meadowsweet
sweet pea
passion flower
hop
hop

21. STIPULES.

the term "bindweed." Artists forget this, and not only endow the hop with tendrils, but will boldly maintain that it has them in nature. It seems natural, knowing that they climb, to jump to the conclusion that they cannot do it without tendrils.

In ornamental design leaves are constantly attached to the stem in a way much too arbitrary for anything like natural and recognisable foliage. It is not often that much attention is paid to the turn or twist of the natural growth, to the length and thickness of the stalk, to the order in which the leaves occur upon the stem, the angle at which they start off from it, the way alternate leaves—those of the lime,

22. THISTLE, WITH CLOTHED STEM.

23. WINGED STEMS.

for example, and the *biscutella* (52)—pull the stem out of the straight and give a zigzag line—in all of which there is character, and may be beauty, especially when the zigzag is softened, as it often is in nature, to a wave line. Again, it is seldom that you see in ornament observance of the way the leaf stalk sometimes thickens at the base, notably in the lime, the plane, and the nasturtium (20), and how the quite young shoot not only fills up the empty space about the stalk, but gives an opportunity, invaluable in design, of contrasting smaller detail with the larger forms of the general growth.

Another possibility that has been left too generally out of account in ornament is in the way the stipules at the base of the leaf stalk enrich a meagre joint.

24. COW-PARSNIP, WITH SHEATHING LEAF STALKS ENVELOPING STEMS.

25. HONEYSUCKLE, WITH FLOWERS, BERRIES, AND CONFLUENT UPPER LEAVES.

26. WOOD-SPURGE, "WITH ITS CUP OF THREE."

In their simplest form, in fruit trees for example, in the hop (21), the common nettle, and in wayside plants without number, they are quite a characteristic feature: in the rose, the pea, the bean, the passion flower, the hawthorn, and the meadowsweet (21) they seem almost made for the purpose of ornamental design.

One of the things most significant of ornament in the natural growth of the leaf is the way that, in many plants, it enwraps the stem—sometimes almost entirely. You see it plainly in every reed and grass. In the thistle (22) the

27. WINGED STEM, *ACACIA ALATA.*

prolonged leaf base is actually fused with the stem, and its prickles form a sort of frilling on the stem between the jutting portions of the leaves. It occurs again in some of the centaurea (23) and in the giant mulleins, where the leaves envelop the stem entirely until it branches out at the top into a candelabrum of blossoms. In many of the lilies the stem is enfolded to a degree that you do not appreciate until your attention is drawn to it—as, for example, in the case of the orange crown imperial, where you are astonished to find that the stretch of plain stalk between the leaves and the flower head suddenly changes colour and becomes purple brown. Looking for the reason, you discover that the lower part of the stem (which otherwise might also be purple brown) is swathed in the green of the leafage.

The pronounced sheath at the base of the leaf stalk which occurs in umbelliferous plants, such as the hemlock and the cow-parsnip (24), is a feature that has been adopted from classic times onwards to clothe the branching of the spiral in the conventional scroll. There is no mistaking the natural source of the sort of husk which gives such character to the Greek scroll; and the very beautiful results obtained

are a lesson in the treatment of natural form in ornament. But it was chiefly this one kind of sheathing which the Greeks (and the Romans after them) developed. It remains for us to make adequate, if not equal, use of the various natural kinds of sheathing already mentioned, and especially of the growing together of two opposite leaves in such a way that the stalk seems to grow through them. You see that in the teasel and in the "thoroughwax," obviously so named because of this apparent "through-growing." In the honeysuckle (25), the wood-spurge (26), the Claytonia and other plants (74), the fused leaves (or they may be bracts) sometimes make a sort of shield on which appears the blossom.

The winged stalk which occurs in some of the peas (23) is a distinctly ornamental feature. There is an acacia (74) in which the stalk is so clothed that the tufts of blossom

28. ORANGE, SHOWING CHARACTERISTIC WINGS TO LEAF STALK.

seem to occur on the leaf. That is so again in the butcher's broom (74), where the spiked leaves, in the centre of which the flowerets seem to grow, are not leaves but winged stalks from which the leaves have dropped, leaving only a scar behind them. In other plants of the same genus (74) the leaf remains, looking like a smaller leaf in the centre of the broad leaf-like stalk. The winged leaf stalk of the orange (28) suggests a curiously jointed leaf-shape. This jointed effect is still more conspicuous in some tropical leaves (31). The freakish modification of the stem, until it looks like anything but a stem (27), seems to be one of nature's ways of adapting itself to special conditions of growth.

29. OAK LEAVES.

IV. LEAVES AND TENDRILS

WHAT a variety in the shape of leaves! Simple or compound, smooth-edged or jagged-toothed; woody or succulent, as in the aloe, that bears on its underside the lasting impress of the lower leaf that once enwrapped it; heart-shaped, egg-shaped, tongue-shaped, shield-shaped; trefoiled or fingered; shaped like a spear or arrow head; hoof-shaped, as in the coltsfoot or the violet—at one time called "hofe" or "hoof" for that very reason; giant leaves like those of the rhubarb, and pigmy leaves like those of the vetch.

Some leaves are flat, like the plane; some wavy, like the horse-radish; some buckled, like the holly—though there are holly leaves which are not bent about in the

characteristic way, and some that have barely a suggestion of the typically spiked edge. There are the broad sheathing leaves of the canna, the little cups of the spurge (26), the fan of the palm, the plumes of the sumach, the curved sword of the iris, and the blade of the sedge, distinguished from it by a waved or buckled edge. Other leaves are crinkled, like the parsley; frilled, like certain ferns; diapered with golden seeds, like the polypody. Broad surfaced or broken up, they may be glossy, like the ivy; hairy, like the borage; wrinkled, like the sage; they may be bordered, or striped, or netted over with a pattern of veins; spotted, speckled, or splashed with colour; symmetrically variegated like the ivy geranium, the cyclamen, and the clover (30). There are stiff leaves that give no idea of motion, fronds that bend of their own weight into curving lines of invariable grace, and restless poplar and other such leaves (with flat stalks at right angles to the blade) that catch the breath of every wind and tremble at its whisper. You think you know an oak leaf when you see it. But go to Kew and you will find oak trees that you pass without recognising. And among the unmistakable oak leaves what a variety of shapes (29)—blunt and pointed, robust and slender, though characteristically unequal in their serrations. There is the live oak, too, without serrations at all.

Nothing could well be more in the interests of ornament than that leaves should change as they do according to their position on the plant, big and broad at the base, smaller as they creep up the stalk, eventually suffering such entire change as to be called by another name—bracts—which, by the way, assume at times very much the character of petals, and so illustrate the botanical fact that flowers are but the development of leaves. Now and then, as in the poinsettia, the flowers are comparatively insignificant, and the flaming red bracts about them pass for flowers

30. LEAVES, SHOWING NATURAL COLOUR DECORATION.

31. LEAF SHAPES.

32. BUTTERCUPS.

33. SOW-THISTLES AND OTHER COMPOSITES.

whose petals look like leaves.

The variation in the size of the leaf, from foot leaves to bracts, is very noticeable in the hollyhock and foxglove and the common dock. In the buttercup (32) and in the honeysuckle, in the sow-thistle and kindred plants (33), the form of the leaf undergoes considerable change. In some trees, too, there is considerable variety in the shape of the leaf—in the fig, for example, and especially in the wild white mulberry. The rose leaf will at times (39) look almost quite "simple," showing no more than traces of its " composite " nature.

The tendril is a feature so obviously useful in ornament that it has been abundantly used in design—though seldom with discretion.

Spines and tendrils are botanically only a kind of leaves (or sometimes branches), though artistically speaking they are

34. TENDRILS OF *MUTISIA* DEVELOPED FROM MID-RIB OF LEAF.

35. TENDRILS : KEY PLAN SHOWING THE WAYS THEY GROW.

quite another thing ; but in the case of the tendril it is in some cases easy to see that it is only a continuation of the mid-rib, which, divested of foliage, acquires the habit of twisting about and attaching itself. In the tare (34) and the pea (35, 36) the branched tendril represents so many leaflets in which the mid-rib is divested of all clothing ; and in the *mutisia* leaves (34) it is still more clearly apparent that the tendrils are but prolonged mid-ribs : the unexpected thing is that, in that case, they take to branching.

For the most part, however, tendrils do branch (35), and it is easy in the case of pinnate-leaved plants—vetch, pea, *Cobæa scandens* (36)—to think of the branches as leaflets of a compound leaf. In the vine they are modified branches. There is one variety of the Virginian creeper in which they develop little suckers, attaching themselves thereby to the wall instead of curling round. You may see in winter a stone wall prettily diapered all over with little round suckers, adhering to the wall where the growth has been removed.

The tendrils of the vine (37) have been likened by the poets to the tresses of their lady-loves, in the days, it is true, when prim corkscrew curls were in fashion. But what a lively corkscrew the tendril is, how friskily it twists and curls about, and what a delightful tangle it gets into, a tangle—look, too, at the tendrils of the marrow (38)—in which it is conceivable that we see the

pea
pas, sion flower
pea
marrow
cobæa scandens
Virginian creeper
bryony
Virginian creeper
bryony

36. TENDRILS.

37. VINE TENDRILS.

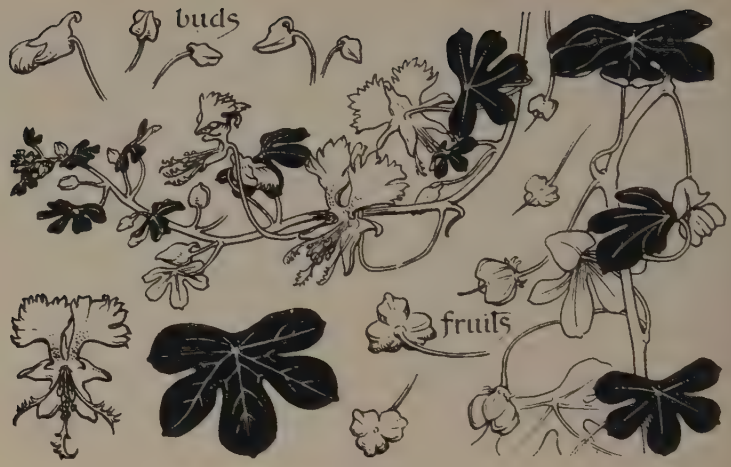
38. TANGLED TENDRILS OF THE VEGETABLE MARROW.

beginnings of ornament whose beauty is in its interlacing. But not all tendrils are branched. Bryony and passion-flower tendrils (35, 36) go on in a single line, curling themselves tightly up for a while, and then suddenly starting off again on a new venture, with a gaiety and spirit that seem never to flag. In a sense, no doubt, the clinging stalks of clematis and other such prehensile leaves (20) may be regarded as tendrils, though we don't call them so.

Apart from the difference between one kind of tendril and another, there is the difference in each kind between the long, smooth, silky tendrils of the young shoot, groping delicately for something in the way of support, and the wiry tendril of the woody growth, with its vigorous contraction and tight hold on what it clutches.

And to think how, with all the charm and character of this natural growth, the tendril has been used in ornament! No feature of plant growth has been worse treated. It occurs chiefly as the wriggling line which may conveniently fill any empty space in the composition, without regard either to the lines it really takes in nature or to where it occurs. There is nothing haphazard about tendril growth. Leaf, stalk, branch, or whatever the tendril may be, it follows always the leaf or branch in the order of its growth. Look at nature and you will see that the tendril deserves to be something more than a stop-gap in ornament.

39. ROSE LEAF.



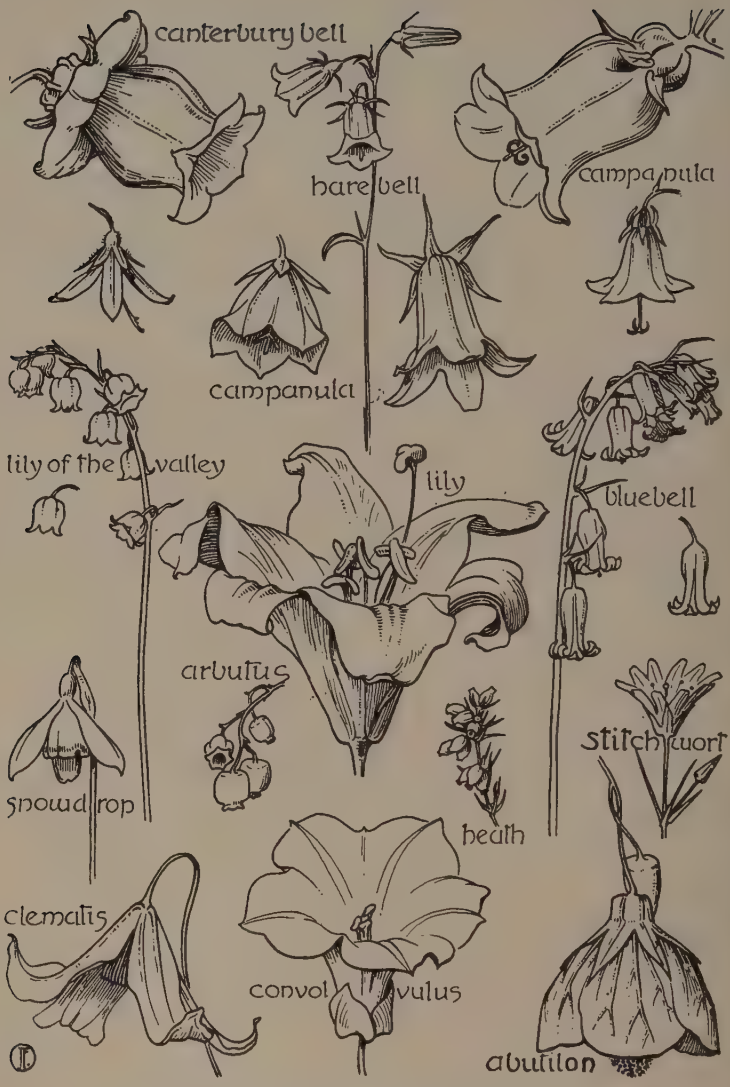
40. CANARIENSIS.

V. FLOWERS AND FLOWER BUDS

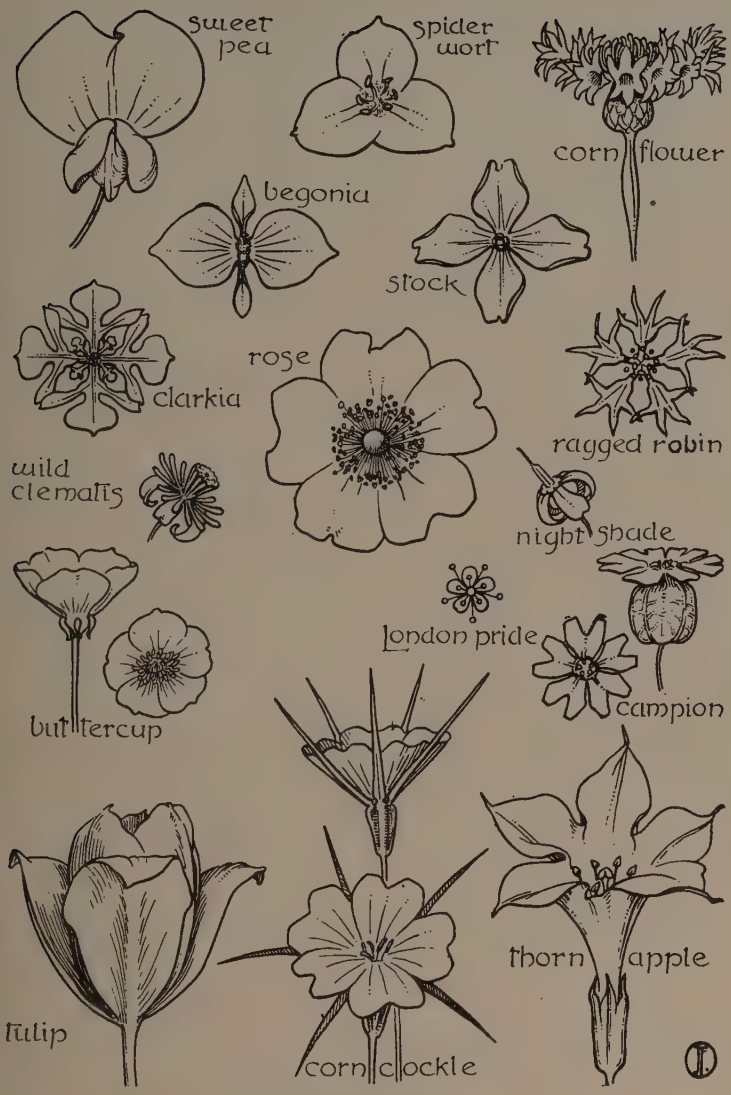
THE petals of flowers may take almost any shape. They may be smooth or broken, pointed or blunt, forked, cusped, or ragged. How formal the florets of the dahlia, how unequal the petals of the begonia, how irregular those of the violet, how feathery those of the wild pink (44). They may be separate or joined at the base, or they may grow together; they form a star in the stonecrop, a bell in the campanula, a purse in the calceolaria, a trumpet shape in the petunia; and something like a butterfly in the pea blossom.

It is difficult sometimes for anyone but a botanist to associate the idea of separate petals with the strange shapes into which they merge—in the close-lipped toad-flax, for

41. TURKS' CAP LILIES, THE PETALS GRADUALLY CURLING BACK TO FORM THE CAP.



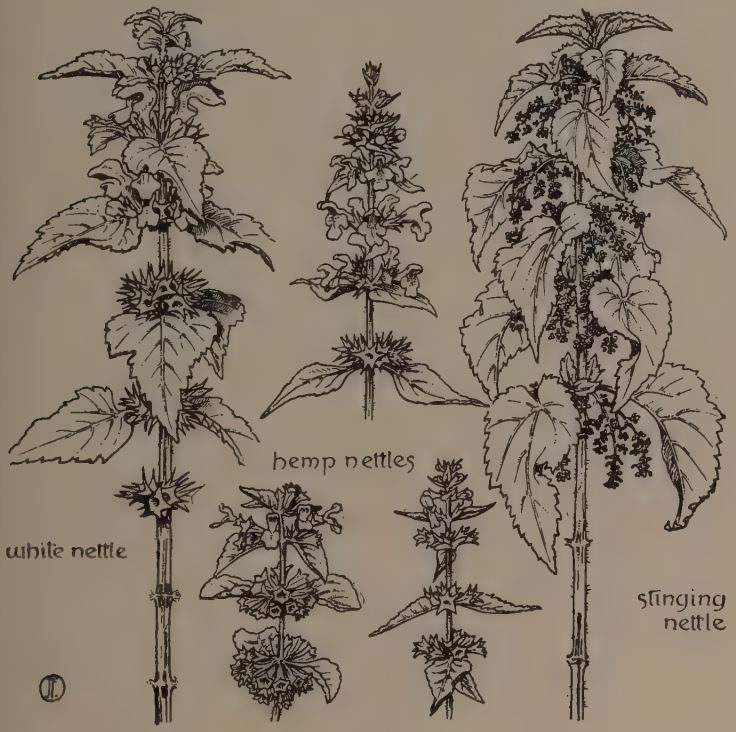
42. FLOWERS, MORE OR LESS BELL-SHAPED.



43. FLOWER SHAPES.

44. PINKS.

example, differing in that from the open-mouthed salvias (71) and from the big blue larkspur with the little brown bee in its bonnet—only the bee is part of the blossom. Besides the spurred larkspur there is the hooded aconite, the columbine, its hanging flowers a group of doves, and the canariensis, in which the lesser petals are confused with the stamens (40). There are whole families of plants, like the monkshood and the orchids, the crocus and narcissus, the iris (78), the fritillary, and the lily family generally (41, 42), in which it is difficult to distinguish petals from sepals. In the



45. NETTLES.

46. GROUND IVY.

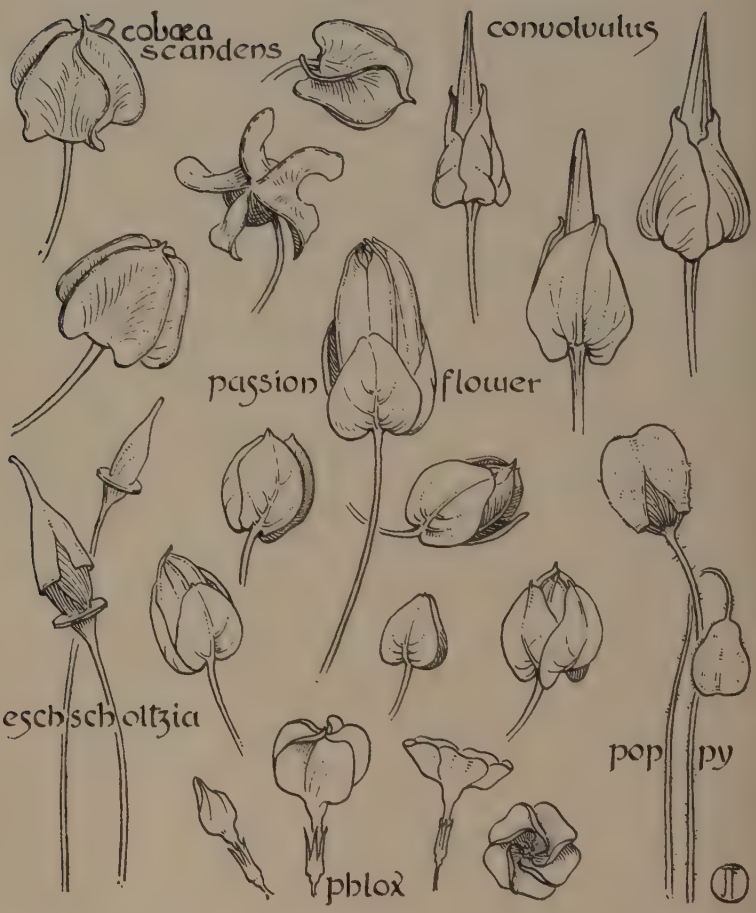
anemone you find stray coloured bracts upon the stalk, as if they had wandered down from the flower. And what a variety of form even in the flower shapes, which may be broadly grouped under the title of bell-shaped (42).

Whatever their shape, the number of petals, forming a trinity as in the spiderwort, a cross as in the stock, a group of five as in the majority of fruit blossoms (51), makes all the difference in design.

In some flowers the pistil forms a feature, developing in the peony its two great horns, and in the pink (44) its graceful double spirals.

There are flowers in which, as in the London pride (43), the stamens are as important as the petals; in the fluffy myrtle and St John's wort their feathery tuft is of

47. TEASEL AND PLANTAIN HEADS.



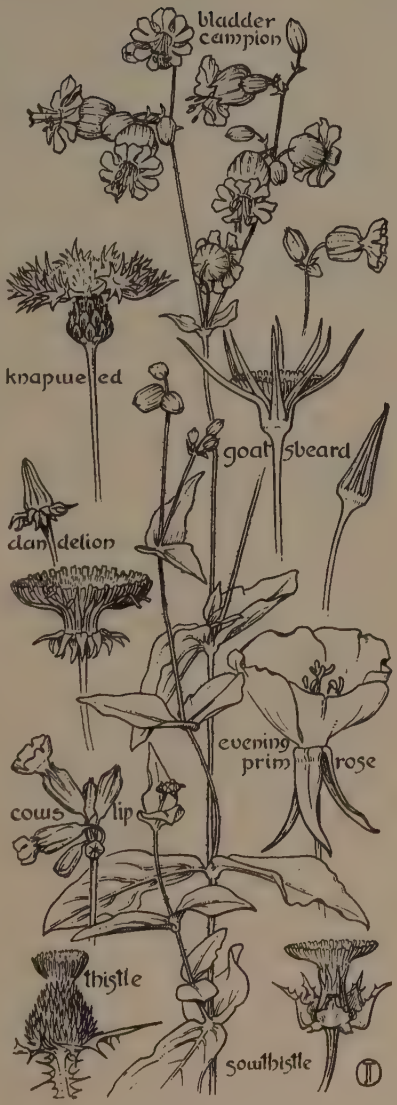
48. BUD SHAPES.

more importance than the petals. In the eucalyptus and in some of the acacias (74) they are everything.

In the placing of the flowers there is infinite suggestion for ornament. We find them solitary and scattered, in heads and in bunches; in balls, as in the onion and the guelder rose; in spreading umbels, as in the elder blossom and the cow-parsnip (24); in tassels, as in the currant and the stinging nettle. They grow erect, like the crocus and the primrose; droop, like the snowdrop and the cowslip; or hang suspended, like the fuchsia and the wild yellow balsam.

The winged flower stalk of the lime blossom goes off at a tangent, making it look as if the flowers grew from the middle of a slender leaf.

In the daisy and the scabious the rings of flowerets make what we look upon as a single



49. BUD SHAPES.

50. BURSTING ONION BUDS.

flower with its brown or yellow eye. In the lavender and the stiff poker plant they grow in tall spikes. The spikes of the monkshood, the larkspur, the veronica, the hollyhock taper to a point, and, like the mullein, they all branch out at their base into subsidiary spikes, so giving the graceful lines upon which, from the beginning, the artist has fashioned his candelabrum. The rings of blossoms encircling like a belt the teasel and the smaller plantain heads (47) make most characteristic decoration—and so do the whorls of little flowers in the axils of the leaves in the blind nettle (45). And what a difference it makes whether the little sessile flowers ring the stalk, as in nettle and salvia, or occur in pairs as they do in the ground ivy (46).

A large flower, sessile, like the blue spiderwort, among its sedgelike blades of foliage, has quite another and just as ornamental a character. And every flower has its habit; it may be fragile as a flax blossom, robust as a sunflower, correct as a dahlia, sportive as a zinnia, dishevelled as a ragged robin.

How well the bud goes with the flowers, too, and what a range of shapes, from the folded bud to the full-blown blossom—or the overblown. What a part the sepals sometimes play! In the campion (49) they make a singularly

51. APPLE BLOSSOMS WITH ENCIRCLING BUDS.

inflated cup; in the corncockle (43) they have a look of being on guard; in the rose they seem to feather the bud delightfully, and in the peony bud they are mixed up with bracts which assert themselves in a way that makes for vigorous ornament. In composite flowers the bracts often simulate sepals, as in the goat's beard (49); while in the teasel (47) they form a very fence for the flower head. In the bud of the dahlia the bracts are a singularly beautiful feature. The involucre of the aster makes in some varieties what looks like a rayed green flower in the midst of which the bud begins to appear like a button of colour. In the passion flower (48) the bracts form a conspicuous cup for sepals and petals.

It is interesting always to observe how, in a spike of blossoms (71), the flowers dwindle away by degrees to the merest beginning of buds at the top, and how suggestive always is the relation of bud to full-blown flower. The buds of white flowers are quite commonly tinted with delicate colour; and in the apple tree the first full-blown blossom in each group of six nestles beautifully white amidst the five pink buds surrounding it (51). A characteristic thing about the growth of the poppy is the way the hairy sepals burst, revealing the crinkled petals within, and drop as they expand, and how the pointed night cap of green gets pushed off the head of the opening eschscholtzia (48). The buds of

the onion blossom burst also through the spathe enfolding them (50). Catkins, of course, begin as buds, develop into flowers, and linger on the tree perhaps as seed vessels. There are the lambs' tails of the hazel nut (58); the fluffy "palms" of the willow, all yellow with pollen; the full, fat poplar catkins, a blaze of crimson against the April sky; and the harsh, dry catkin of the birch in summer.

52. SEED VESSELS.

VI. SEED VESSELS

In seed vessels there is an astonishing variety of shapes ready made to the hand of the designer, and especially of the metalworker. A single family like the cressworts or the vetches offers quite a choice of ornamental device. Compare the pod-like vessels of the cresses with the heart-shaped pouches of the shepherd's purse, and these with the double shield of the *biscutella* (52), which, like them, opens out at its base to shed its seeds, and in so doing gives new forms of ornamental value.

The flat capsules of the honesty (55), as broad almost as they are long, are more familiar to most people when they have shed their brown shields and show only the silvery skin between. There is room even to suspect that some modern designers, who have treated the plant as if it were a tree, are acquainted with it only in the vase on the mantelpiece; at any rate they abstain, carefully or carelessly, from giving either the leaves or the purple blossoms which accompany the seed vessels in nature.

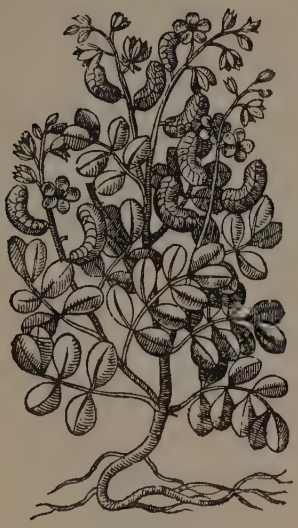
What a variety again in the shapes of the pods—flat and gently curved in the bean, fat in the garden pea, inflated in certain acacia bushes, long-fingered and appearing more or less to radiate in some of the vetches. This is a feature that has been recognised in Italian Renaissance sculpture, where the Greek anthemion has been inoculated as it were with the pollen of the pea (56). In other vetches it is kidney-shaped, or curled up like a snail-shell, smooth or spiny, as the case may be. The dry pod of the common

53. HUSKS.

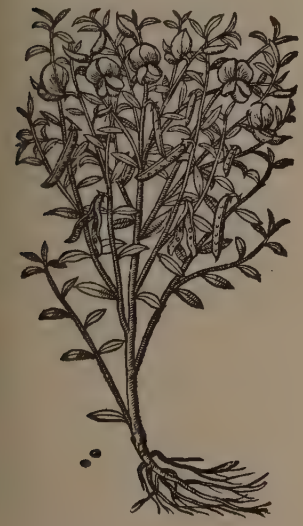
broom (57) curls up as it opens in the sun in a delightful way, giving not only a valuable contrast between the rough outside and its glossy inner surface, but lines also of very considerable grace. In the laburnum pods, still clinging to the twigs in April just as the green is beginning to burst forth, you may see this same contrast between brown shell and straw-coloured lining, but with the dark seeds adhering. There are acacias, too, in which the pods have more the appearance of a string of oval beads, contracting as they do in the space between the peas to little more than a thread between the separate seeds.

The dry husks from which the seeds of the salvia (71) and the nettle have fallen (45) form at intervals a sort of prickly crown round the stalk just above the starting-point of the leaves. In the wild mint (53) they form quite an ornamental feature. In the knapweed (53) and other thistle-like plants, the brown calices from which the feathery seed has flown glisten like stars in the sunshine. So do the open four-pointed cups of the beech mast (58) in which, perhaps, the bright brown nuts remain. The empty acorn cup (59) is not so beautiful within, but it contrasts most usefully with the full cup and the undeveloped fruit, and its scaly and sometimes hairy texture is a perfect foil to the smooth acorn.

"PARTY COLOURED CHICHLING."



"ITALIAN SENE."

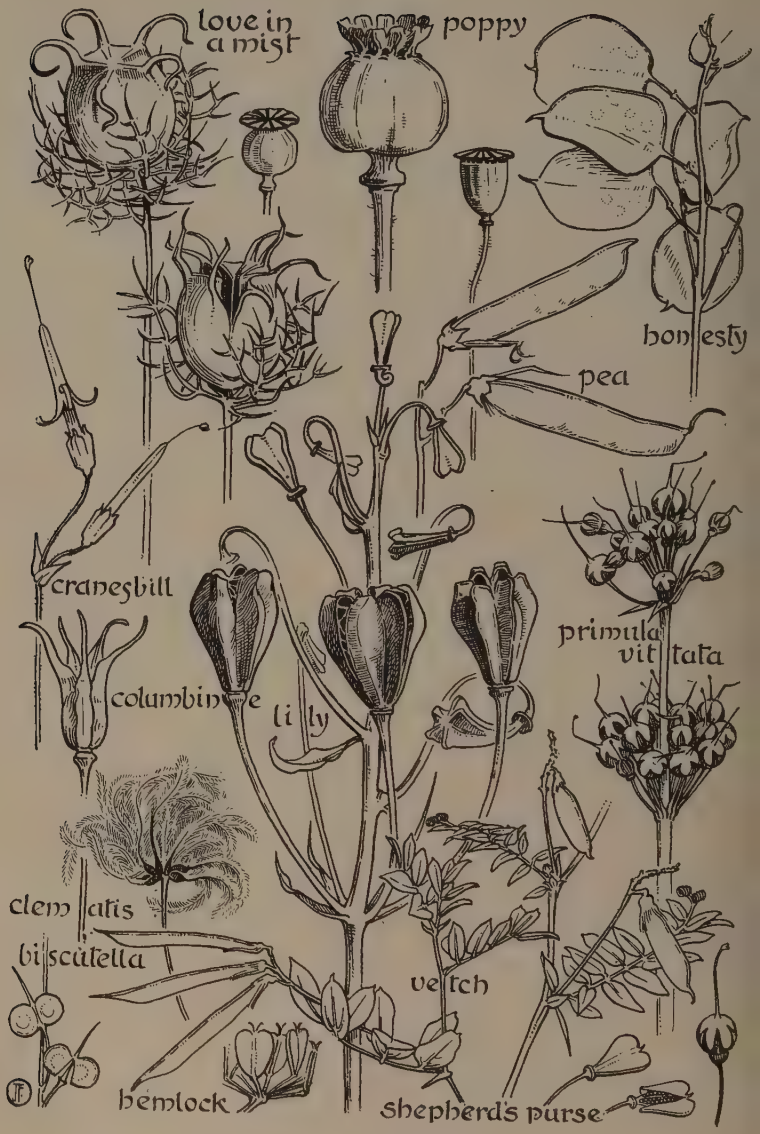


"THE HORNED SHRUB TREFOILE."

"SPANISH BROOME."

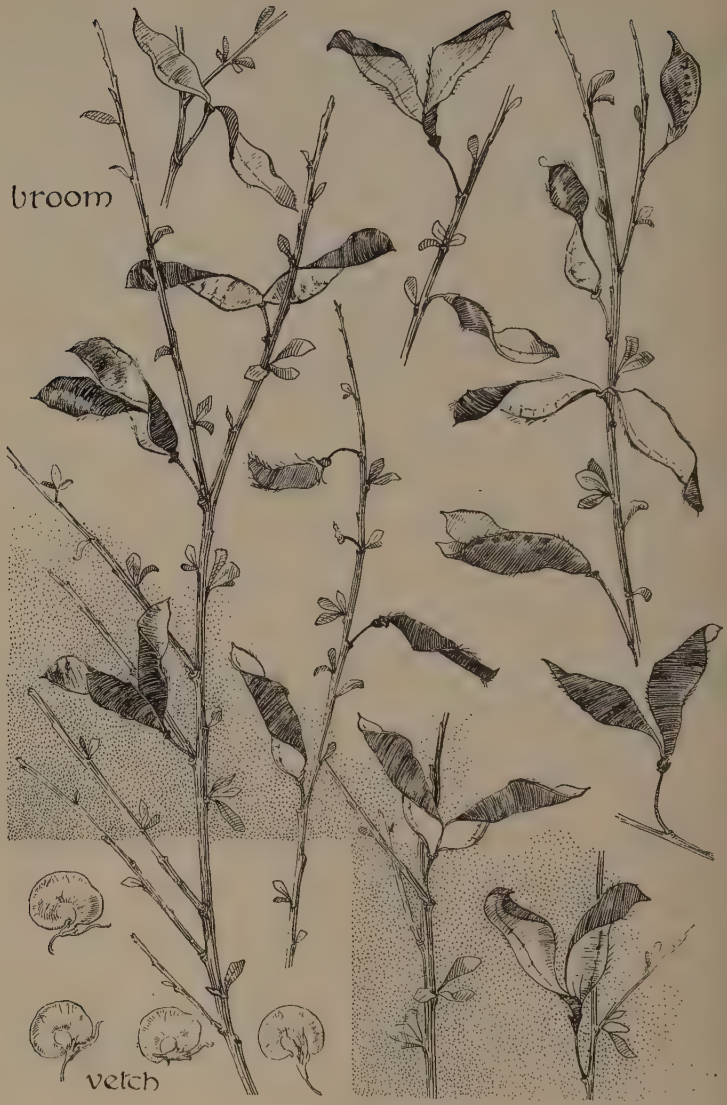
54. VARIOUS TYPES OF PODS.

From John Gerarde and Thomas Johnson's "The Herball or General Historie of Plantes."



55. SEED VESSELS.

56. ITALIAN RENAISSANCE ORNAMENT, REMINISCENT OF PEAPODS.



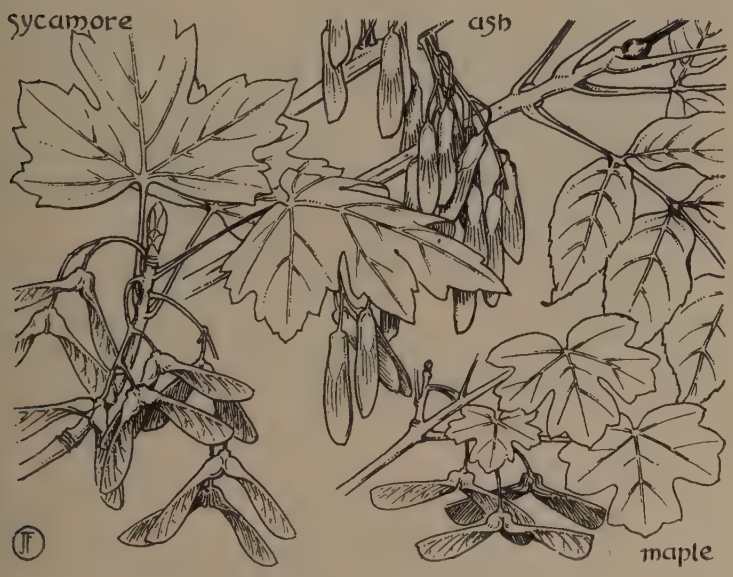
57. PODS.

58. NUTS AND CATKINS.

59. OAK AND ACORNS.

The green wrapping of the hazel nut (58) and filbert takes sometimes very ornamental shape. The husk of the horse-chestnut is less beautiful than that of the Spanish chestnut, which, in its unripe state, forms starry balls of golden green, lightening up the foliage of the tree in the most charming way.

The hairy, clinging coat of its seed vessel has, in some cases, given the plant its name—burdock, for example, and cleavers. Seed *vessels* indeed are the spiked receptacle of the thorn apple, the cones of the firs, the big brown pods of the iris bursting into three parts to show bright ranges of orange-red berries. There is character in the fruits of the lily (55), as in those of love-in-a-mist (55), and the two-horned peony pod; still more in the urns of the poppy head (66), variously shaped, but alike in this, that



60. WINGED SEED VESSELS.

they have a comparatively flat, projecting cover, beneath which are the little perforations for the seeds to make their escape. The strangely elongated horn of the sea-poppy is an interesting exception, plainly suggestive of ornament.

On a smaller scale, there are the pointed spires of the crane's-bill in seed (55), the " cheeses " of the mallow, and the grotesque seed-heads of the antirrhinum.

The naked seeds (or fruits, as the botanist would call them) hang often in bunches—single in the ash, double in the variously winged " keys " of sycamore and maple (60). Smaller seeds, more or less flat winged, adorn like a fringe the rhubarb and the sorrel. In the plane the seeds are gathered into round bunches and hang like tassels—quite a feature among the bare branches. The downy balls of the dandelion, and especially the goat's beard (61), are fairy-like in their beauty; and it is curious how the green, vase-shaped involucre from which the starry seeds have flown assumes in some of these plants much more beautiful shape than it did in the bud before it opened. In thistles you may see sometimes the white stars, escaped from the flower-head, caught in the prickles of the leaves in such quantities as to form a snowy down upon the plant. The seed heads of a certain anemone go in Switzerland by the name of " plumes de montagne," and those of our cultivated clematis are sometimes almost as beautiful: those of the wild clematis we know as " old man's beard " (55). The connection between seed and root is nowhere more clearly demonstrated than in the onion, where you may see in the seed head itself actual bulbs beginning already to send out their shoots of green.

61. FEATHERY SEED HEADS.

snow berry
rose hips
privet
yew
bryony
spindle berry
hawthorn
barberry
night shade

62. BERRIES.

VII. FRUITS

THERE remains the variety of seed vessels popularly called fruits, though to the botanist, of course, any fully developed pistil is a fruit.

Some fruits, as we call them, are not, strictly speaking, fruits. The mulberry is an agglomeration of fruits, and in the strawberry the fruits are, to be quite exact, the specks or seeds upon the " receptacle " we call the fruit. What, by the way, would the botanist do without the convenient word " receptacle " ?

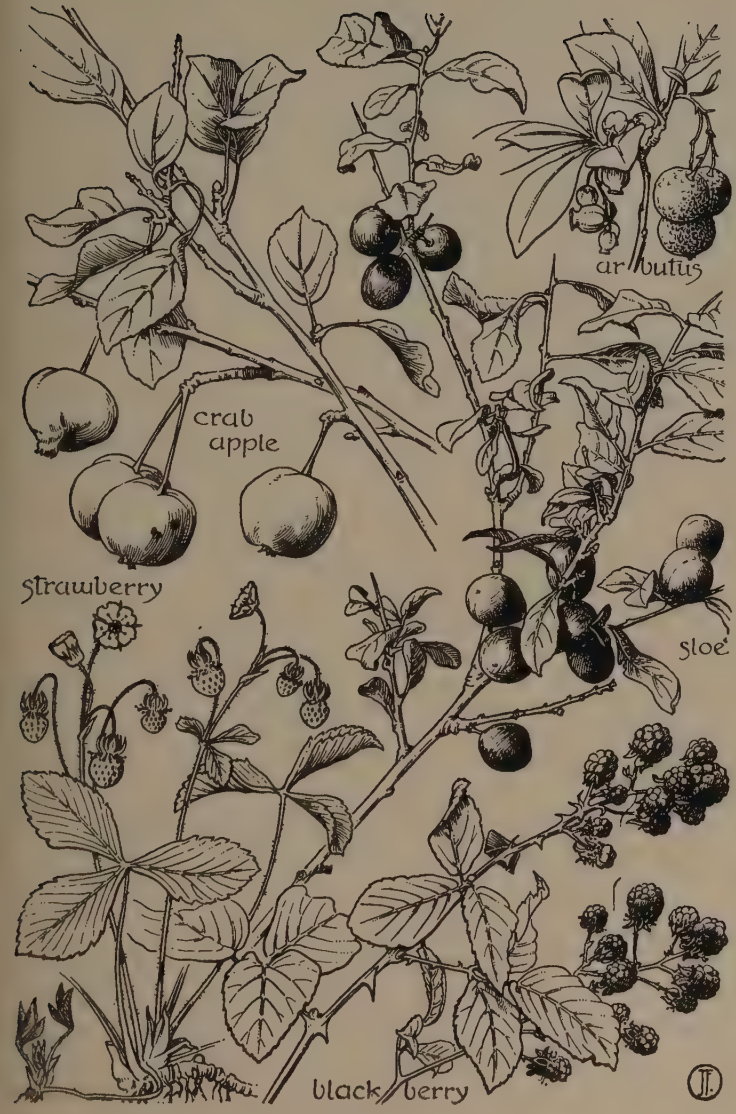
What matters to us is the very different forms the ripe pistil takes. The succulent fruits distinguish themselves very emphatically from dry seed vessels, and make for us a separate class of fruits. First among these there are the berries—a common feature in ornament, but as a rule reduced to bunches of spots, or beads, all very much of a shape, and growing (if they can be said to grow at all) with little of the character of any particular plant. Yet how varied they naturally are in shape (62)—round, pointed, oblong, egg-shaped, and so forth. And how differently they grow—erect or pendent, crowning the stalk, or clustered round it, or hanging from it. Take the upstanding berries alone, and how different they are—the smooth privet berries, the slightly crested haws of the thorn, the full crowned hips of the briar (62). And what variety in a single family, as in the rose berries, sometimes elegantly urn shaped, sometimes thin and tapering, sometimes rather squat, sometimes, as in the

Japanese variety, fat and swollen, but with a royal crown of outstretched sepals. The barberries, again, vary from round to oblong and from red to blue. And, still among berries that droop, how quickly you distinguish the nightshade from the bryony by the way they grow.

Exceptional berry shapes are those of the yew (62) with its translucent red cup for the seed, the bursting spindleberry (62), and the fleshy snowberry nestling (62) among little pink and white blossoms. A feature about the orange (28) and the citrons generally is that the tree is in flower and in fruit at the same time.

If, then, you compare the honeysuckle berries (25) with the snowberries (62), the privet (62) with the dogwood (17), the nightshade with the barberry and the bryony, the arbutus with the spindle, that with the yew, and all with the hawthorn and the briar (62), you will see that it is not from nature that the designer of ornament learnt to make berries all of one shape and all growing one way. The arbitrary use of the term berry is seen when we compare the sloe berry (63) with the cultivated plum, which, of course, is only a larger berry.

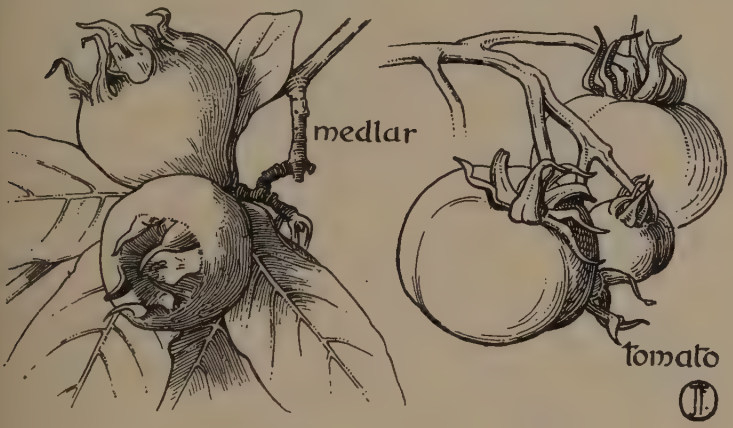
Fruits, as we call them, divide themselves obviously into two kinds (64)—those in which sepals crown the ovary, as in the medlar, and those in which they cluster round its base, as in the tomato, the potato, and the belladonna. Where they remain they are always artistically significant features in the fruit. In the pomegranate they rise in a pointed crown upon its head. More often they are insignificant, as in the withered "tops" of the gooseberry and currant. In the apple (63) and the pear they usually shrivel into nothing, though in the unripe fruit they are a conspicuous and beautiful feature. By the way, little or no use seems to have been made in ornament of the quite young fruit, in which the still vigorous sepals play a prominent part.



63. BERRIES AND FRUITS.

The unripe fruit is at times more suggestive than the ripe. The fresh green husk is a much more satisfactory sheathing to the nut than when it is dry and shrivelled.

It is curious to notice how in the pomegranate where, by exception, the sepals are of the colour of the fruit, they begin by usurping more than their due share of attention; in the end they are just a fitting crown to a kingly fruit. The significance of the burst pomegranate (split by the sun after rain, they say) exposing its blood-red seeds, has led



64. FRUITS—TYPICAL EXAMPLES.

to the symbolic use of this particular fruit, and consequently to its ornamental treatment in design; but it is strange how little use has been made of anything of the kind in other fruits which, like the spindleberry (62), burst their husk and show the berries within. There is, by the way, a squareness about the pomegranate fruit which distinguishes it from rounder fruits. Some of the apples, too, are more nearly five-sided than round, and taper inwards from the base, just as the pear swells outwards from

its stalk. That is a point not sufficiently observed in ornament, where fruits are commonly made rounder than they are.

The lingering of the fruit or seed vessel upon the tree until well into the spring, even until the time when the green begins to appear upon the twigs, is another point that seems to have escaped designers.

64*a*. MEDLAR. 64*b*. CLOVER.

By Jacques le Moyne de Morgues (Sixteenth Century).

Victoria and Albert Museum.]

64*c*. MICHAELMAS DAISY.
By Charlotte Horne Spiers.
Victoria and Albert Museum.]

64*d*. TORENIA.
By Marie Anne.

VIII. ACCIDENT AND INCIDENT

In the very vicissitudes to which all vegetation is subject there is good fortune for the ornamentist. When the sap ceases to flow, new and more gorgeous colour glows on the trees, and dying leaves take a warmer and a richer tint, that may be the making of a colour scheme. Moss and lichen, fungus and other parasitic growth have all something to say to the designer, apart from the fact that in every incident of vegetation, even in its decay, there is something of the sentiment which gives character and colour to ornament. Where would be the interest in the story of man's life without the record of misfortune and death ?

We owe to the enemies of vegetation new forms of ornament. Who has not noticed the beautiful feathery burr upon the briar ? And there are other smooth galls peculiar to the leaf of the tree which look like little beads of coral on the green. There is a poplar tree, too, of which the leaves bear on their leaf stalk what looks like the pod of a single pea (65).

The gall fly gives occasionally most timely help to the artist, and provides him with something like another fruit with

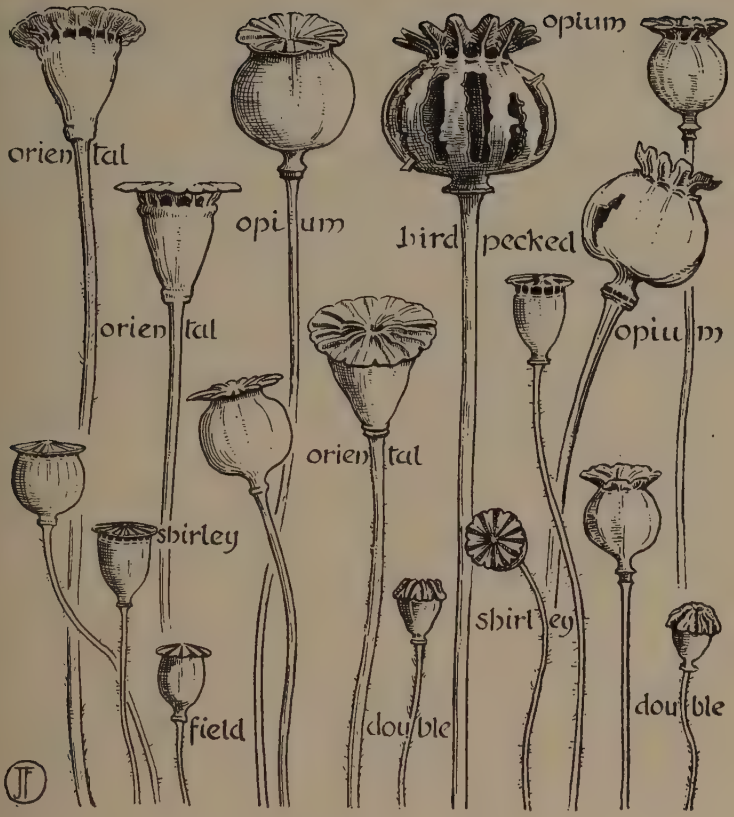
65. POPLAR LEAVES WITH GALLS ON FLAT STALKS.

which to vary his design. Besides the soft oak apple, associated in our boyish memories with King Charles, and the hard ink galls (59) which in winter form on some trees quite a decoration of the bare boughs; besides the canker which attacks the leaf bud, transforming it into something like a small fir cone, there is the round fruit-coloured gall occurring most conveniently just where fruit would never be. You may count a dozen or more, many of them as big as a marble, on a single oak leaf. And what a contrast they form to the acorns. It may not be pleasant to pluck what looks like a rosy pod upon a tree, and find it burst in your fingers into powdery insect stickiness; but the appearance of the abnormal growth is pleasing and suggestive of ornament, and the hereditary enemy—gall fly or whatever it may be, to whose attack all vegetation is exposed —is not so surely the enemy of the designer.

The visor-like aspect of certain poppy heads (66) is due to the opium-eating tits that have pecked their way through its walls to the seeds they affect.

The abnormal forms are, of course, the accidents of plant growth, and accident is the contradiction of design. For all that, it is in some measure owing to the entire elimination of what is accidental in nature that conventional ornament is apt to be tame. Perfection ends in being dreary. And though there is nothing, strictly speaking, accidental in design—which is the very opposite of accident—the designer of ornament is bound, nevertheless, to take advantage of whatever may befall. An artist will not incorporate into his work awkward or ugly traits of nature which better men before him have for obvious reasons left out of account; but wherever a freak of nature has character and beauty, he will seize upon it. All is grist that goes to the mill of ornamental design.

You will find in vegetable life the field most fruitful of suggestion in ornament; it is so amenable to treatment; but



66. POPPY HEADS, VARIOUS.

the vegetable world is densely populated, and, what is more, its inhabitants lend themselves more or less to ornament. It is not only that they come in usefully to fill up a vacant space—that is rather a paltry use to put them to—really they belong to the various plants they feed on, to the trees they inhabit, and so forth.

It would be pedantry to pretend that in ornament only

the particular creature that preys upon a plant should be associated with it; but it adds greatly to the interest of a design when a bird, beast, insect, or reptile included in it belongs to its surroundings. And here, as everywhere, nature gives the hint for happy combination. The designer will notice not only that there are birds among the boughs, hairy-jacketed bees among the flowers, gaily bedizened butterflies in the fields, quaker drab moths in the woods, crawling things on the ground, and sinuous creatures floating in the water; he will observe the particular thief in the cherry tree, the robin in the holly bush, the squirrel where the fir cones are, the lizard posing on the crannied wall, grasshoppers in the shimmering grass, dragon-flies swarming like great blue gnats among the fennel, the caterpillar on the leaf that it feeds on.

Have you not seen, after a shower of rain, dainty little snails with delicately striped shells making quite a pattern upon the poorly clad shoots of the broom, bronze-green beetles foraging in the heart of the rose, brown bees diapering the great disc of the sunflower? This, by the way, is an incident which, even when for a moment the sunflower loomed large in English ornament, was never made use of in design.

From insects to reptiles, birds, beasts, and fishes is only a step; and they, too, have their uses in ornament, though they are by no means so adaptable, and therefore not so available in ornament. Everywhere in the animal world there is suggestion of pattern—in the spots and stripes of furred animals, in the feathering of a bird's neck, the mottling of its breast, the "eyes" on his quills, in its upraised crest and outstretched wings, in the proud fan of its tail; in the markings of sea shells and in the diaper on the back of the tortoise; in the stripes of a lizard; in the pattern down a snake's back, spotted or simply plaited (as it seems, though it is nothing of the kind), and blending

cunningly into the simpler scales of its underside. As for the scales of fishes, they provide us with a diaper as beautiful as it is simple in construction.

In the shape of the creatures themselves, or parts of them, what beautiful lines! in the cockle-shell, akin to the Greek anthemion; in the ribbed and dotted dome of echinus; in the spiral of the snail-shell; in the horns of animals, coiled in the ram, twisted in the antelope. And the live creature, how splendidly it poses, as though for the very purpose of the artist—the lizard, a very picture of alertness; the snake, in every line subtly sinuous and graceful; the goat that perches itself upon a height as on a pedestal; the seal, glistening like polished bronze; the cat, falling naturally into the attitude of the sculptured lions of old Egypt; the squirrel, sitting up under its own tail; the bird that rocks itself upon the topmost branch of a tree, or maybe stands at the waterside on one of its two long legs, just winking a sleepy eye from time to time to give notice it is alive; the alligator with wide-open jaws, the chattering ape, the cruel vulture, the absurd pelican, and all the odd creatures ready-made for grotesques.

Much more might be said about animals as motives in design, and would have to be said, were it not that they are useful, not so much as component parts of pattern, as by way of incident in ornament.

IX. COLOUR

For our colour schemes, too, there is only nature to go to—the sky, the water, the earth and all that is thereon. Who has not watched the green rain of grass up-pouring from the ground, the tender tints of early spring merging into green as soft as that which first sprinkles the beech bough in May? In the smokiest of towns there is a brief moment of fresh leafage. In the country we find the grass white with daisies, yellow with primroses or buttercups, ruddy with sorrel blossom, blue with wild hyacinth or deeper-toned bugle, grey with minute forget-me-nots, lilac with scabious, and, if we go further afield, rosy with pinks, or purple with salvia. You may catch the brown earth itself blushing with brick-pink pimpernels among the stubble; and when you see the almond blossom full in flower, the cinnamon cherry leaves, the tender green of the unfolding chestnut fingers, the young shoots of the ash, and all the delicate spring buds against the threatening sky, it seems as if they must have been designed for just that background of angry April thunder-cloud.

In the details of natural growth there is guidance more direct for the ornamentist—would he but accept it. In the matter of colour we have not the wit to allow ourselves the latitude of nature. We take it for granted that red, blue, purple, and yellow are colours expressly reserved for flowers and that leaves, stalks, and so forth are all green. That is not the teaching of nature and to adopt it as a convention argues very little observation on our part. Look at the

flower stalk of the begonia, the salvia, and the sea-holly, and you will see that it is more in harmony with the flowers than with the leaves; it is often quite purple. There is a hot-house plant in which the little purple flowers grow from stalks of a vivid red-orange. The leaf stalk is often crimson, as in the crane's-bill and the sycamore, or yellow, as in the beet and some poplars, and quite bright yellow too.

Leaves themselves are, no doubt, normally green, but it is a green so infinitely varied that it must be called at most

67. JAPANESE PLANT DRAWING.

grey-green, olive-green, brown-green, or by some such compound name, and might perhaps better be described as grey, olive, or brown. Again, what difference there is between the green leaves of the young shoots, especially the summer ones, and the full-grown leaf, even when they are green at all and not red or brown, as in the rose, hazel nut, hornbeam, and maple. In the wistaria they vary from bright green to delicate fawn colour. In the young oak shoots the leaves are red and yellow-green and every intermediate shade between the two; there is a barberry with blue-purple foliage upon a purple-brown stem. Autumn leaves we think of as yellow, red, brown—anything but green.

There is a sort of salvia (a labiate, at all events) the topmost leaves of which are pronouncedly pink or purple, according as the little sessile flowers below are touched with one colour or the other. This seems quite abnormal, until it is remembered that the leaves of the common bugle are warm enough to have given it the name of "wood brown." That alone should help to keep in mind the fact that leaves are not all green—just as the name of "ever fern" makes it impossible to forget that the polypody keeps its green all the year round. The old names tell us a good deal about flowers. Modern horticulturists tell us chiefly who it was that invented the latest form of distortion. Men of science simply mystify the artist.

No one could be of more use to us than the botanist, if only he knew what we wanted. Possibly he would find it difficult to respect our point of view. As it is, it is exasperating to turn to Lindley's "Vegetable Kingdom," and to find in its 908 pages no mention of such a thing as a "thistle," which to the artist is one of the most typical varieties of plant form, and, when at last one comes upon it in a smaller and more elementary treatise, to learn only that it belongs to a suborder of the daisy family. It is safe

to say that none but a botanist, the first time he ever saw a thistle, would take it to be ever so remote a relation of the daisy.

It was from the Japanese that we first learnt the full value of the difference in colour between the front and the back of the leaf. They have adopted the very useful convention of representing the front of the leaf in solid black with white veins upon it, and the back of it in outline only with dark veining (67), much as a mediæval herald made a distinction in colour between the two sides of his mantling. But we

68. WHITE BRYONY, IN FLOWER AND IN BERRY.

have made nothing like full use of the opportunity nature offers us of emphasising the difference in colour between the back and front of the leaf. It is a difference not only of texture or of strength in the green, but of local colour. In many trees—the alder, the poplar, the willow—and many garden plants, the green leaf is silver-grey on the underside; in some magnolias it is reddish-brown; in the wild lettuce it is purple.

The vari-coloured leaves have also to be remembered—the seakale, grey or purple, merging into green, with yellow-green veins; the green spear-heads of the sorrel, with blood-red tips; the big thistle leaf and others, netted over with white veins; the crotons, green and yellow or green and red, the contrast softened by a blend of the two; the speckled aucuba and honeysuckle and maple; the green or other coloured leaves that are veined or outlined with yellowish white. On the common field orchis there are cross markings of transparent colour which look like obvious touches of the brush, the darker blobs at the end of the touches indicating where the brush left—I had almost said the paper.

Occasionally a flower like the hellebore (69) will blend into the green of the leaves. But it is in the flower, when all is said, that we expect to find the fullest, brightest, and most beautiful colour—the red of the poppy and the rose, the yellow of the daffodil and of the gorse, the orange of the nasturtium and the turks' cap lily, the purple of the wistaria, the salvia, and the pansy; and the perfect blues of the flax, the chicory, and the incomparable gentian—though it is often impossible to render the variety of the colour, changing, as it does, in the bluebell and the larkspur from green, through blue, to purple; and in the rose from pink, through yellow, to white.

Nor can we always render the texture, silky, woolly, or velvety, which so greatly affects the quality of a colour. It is

69. HELLEBORE.

part of the designer's business to note in nature the colour effects which his medium will give him. There are colours in nature, for example, which have just the quality of vitreous glazes or enamel, others which seem to be made for reproduction in silk or velvet, others that can be matched in woods or marbles, and so forth.

There are some flowers which, without the emphasis of colour, sink into insignificance; some that by their breadth alone, or by contrast to their leaves, hold their own in monochrome.

Apart from the gradation of colour in the petals, there is the change, more or less sudden, between, for instance, the eye of a coreopsis and the yellow flowers that radiate from it. There is a sort of feverfew in which the strong colour of the eye stains out and tinges the inner part of the white florets with yellow. In the gaillardia it is red that stains out from the dark eye into the yellow rays.

We meet in certain plants with a strange variety of colour in a single head of flowers. In the forget-me-not the flowers vary from blue to pink, and in the hydrangea from pale green to mauve, pink, and colours altogether beyond description. Sometimes the change of colour in flowers is too sudden to be beautiful; the purple petticoats of the crimson fuchsia are all right; but the white skirt asserts itself unpleasantly. Parti-coloured flowers are seldom very satisfactory unless the colours are in harmony, which they usually are in nature.

In the colour of fruits, also, there is much to be observed, not only in the greater warmth of the colour on the side exposed to the sun, but in the difference between the ripe and unripe fruit, very noticeable in the vari-coloured berries, emerald, orange, scarlet, in a single bunch on the white bryony (68), and in the lords and ladies in the hedge banks. In the elder tree you have a choice between apple-green berries with reddish stalks in the early summer, and black

berries with crimson stalks in the autumn, when the leaves have turned perhaps bright yellow.

The grey-green juniper with its blue berries is relieved sometimes by feathery patches of cedar colour, where a branch has died away. Day by day the cold purple of the heather is made warmer and more grateful to the eye by the increasing quantity of dry bells burnt to the colour of dead bracken. To the eye that can see it, there is colour everywhere. The humble cabbage patch, with its greys and greens and madder reds and every imaginable shade of blue and purple between, presents a perfect carpet of rich colour.

It is not alone in the vegetable kingdom that we find colour. There are the butterflies! the birds! each individual creature a separate scheme of colour, ranging from the quietest and most quaker-like to the richest and most regal. The homeliest songster is an object lesson in the variety and quality of colour there really is in greys and drabs. It is a continual astonishment to find what subtlety of hue, and even what bright colour, there may be hidden away in plumage that looks at a glance just brown. The gaudiest lovebird, on the other hand, is a lesson in the daring use of hues in themselves as bright as can be, and in the contrasts of shrill colour that are compatible with harmony—for those who have any stomach at all for strong colour. Many of us have none.

That is just it. In the matter of colour personal bias goes for so much that it is difficult to talk about it to any purpose; but whether it is rich or modest colour we affect, strong or tender, warm or cold, gay or gorgeous, subtle or pronounced, it is in nature we shall find it to perfection.

70. GOOSE GRASS.

X. NATURE STUDY.

In the freedom of natural growth there is a moral for the designer. Punctilious attention to botanic accuracy has many a time resulted in ornament more tiresomely exact than anything in nature. Leaves occur on their stalks at ordered intervals; but their distance apart is not mathematically measured: they grow, and with a variety and go which looks as if they had something like a will of their own.

The convention, if so it may be called, of the horticulturist is seldom to the taste of the ornamentist. Leaves or flowerets radiating from an axis with the precision of wheel spokes, spikes of blossom trim as a clipped yew tree

71. SALVIA, FLOWERS AND EMPTY CALICES.

or a French poodle, are not to his liking at all. Nor is that nature's way. There is nothing mechanical about the radiating leaves of the goose grass (70). A flower spike is built up on a quite regular plan, but individual blossoms have a way of shooting out in the most casual manner. This is very plainly to be seen in the salvias (71), for all the gardener's pains with them. Whether in the woods or in the meadows, by the wayside or the river bank, nature never wearies of playing variations upon the symmetric plan of plant growth. Certain plants, says the gardener, have a bad habit of "sporting." And pray, why not? What is the matter with bedding-out plants is, that they are reduced to one dead level of sameness. The mischief is that there is nothing sportive or unexpected about them.

The method of the florist, rigid in its propriety (he seems, happily, to be beginning to relax a little), affords a perfect example of what *not* to do in the way of modifying natural form. His plan is to eliminate whatever is wayward, occasional, uncommon, characteristic. Look at his trim Dutch hyacinth, with flowers as regular as the curls of a judge's wig, and compare it

72. BRIAR ROSE, IN FLOWER AND FRUIT.

with the wild bluebells. Look at his double dahlia: it is prim enough in the single form, with clean cut flowerets that insist upon your counting them; but what a bunch of ribbons it has become in his hands! To reduce a flower to the likeness of a rosette is not to make it more ornamental; and every accident indicative of a return to nature is a welcome relief from such unmeaning evenness of form. Another example: the briar rose (72) is the motive of

73. GARDENER'S ROSES.

most beautiful ornament; the cultivated double flower (73) almost defies ornamental treatment.

Nature may fashion a tree at times that looks almost as if it had come out of a Noah's ark; but the cypress itself, sober and formal as it is, seems in the end always inclined to rebel against our foregone idea of it, and waves at its topmost point an irregular little wisp of a shoot, that looks as if it had come to the conclusion it was time to go its own way.

It is true, ornament may more fairly be compared to the growth of a garden than of a wilderness. And nature cannot be allowed to run wild over this garden. But neither ought it to be clipped and trimmed and formalised until there is no character of its own left in it.

No one who has any idea of the latitude nature allows herself would think of limiting the ornamentist to one hard and fast rule of growth. He has to acquaint himself with the anatomy of plants, and especially with their growth; where it comes to anything like natural treatment, he has further to take into account the habits of a plant, its manners and customs, so to speak.

There is, of course, if we inquire into the matter, always good structural reason for any particular turn of growth. It is, however, the outward form of things which most concerns the ornamentist. Sufficient for him the visible side of nature. And very slight observation will show him that nature is not over anxious to emphasise every botanical point. She appears at times to break her own laws, and to make leaves look as if they grew from the centres of leaves (74). The truth of it is that she only breaks rules we have been bold to lay down for her.

At all events, plants very often grow differently from what science has taught us to expect. Against a wall, for example, where leaves cannot grow in the normal spiral fashion, they will arrange themselves quite contentedly

74. FLOWERS OCCURRING IN AN UNUSUAL WAY.

75. GROWTH OF THE SUNFLOWER.

on the two opposite sides of the stem. And if that occurs in nature, why may it not be so in art ? There is one thing to beware of—lest a design should seem to show ignorance of the ways of natural growth.

It becomes a question with the designer always at what stage of its development he shall choose his plant. Trees like the birch and the juniper, at one stage elegant and graceful in a rather limp way, present at another a draggled appearance of shabby gentility. There is a time about the end of July when every this year's shoot of the plane tree ends in a leaf bud, and, just below it, quite a small leaf, lighter and warmer in colour than the rest of the leaves, slightly drooping in its attitude, the stalk a little above it furnished with sheath-like stipules. The sunflower in full bloom has a way of hanging its heavy head in rather a languid way; but what more typically alive and vigorous than the well-grown plant about to blossom (75) ?

Such variation is there in the natural growth of a plant, according to where it grows and to the season, that a thorough study of it is not the simple thing it might seem. A designer must watch it throughout the year, perhaps through several years, before it reveals itself to him with all the possibilities of ornament that lie in it. Certain seasons are peculiarly favourable to the development of certain plants in the direction most suggestive of design. In a wet summer, when vegetation goes on apace, what seemed in normally dry seasons the confused way of growing peculiar to the plant, makes itself clear at last. The stalks being so much longer than usual, and the leaves so much further apart, you see at a glance how it grows, and how you can now make use of it in ornament.

The obnoxious calceolaria will, under favourable conditions, emancipate itself from thraldom (another condition being perhaps a reaction against the old order), and grow

to something very different from the crude little clump of yellow, "bedded out" with equally crude geraniums. It will shoot up to 5 feet high, with slipper-shaped blossoms (purses no longer) which, with their stalks and calices, blend most delicately with the soft green leafage.

You hardly recognise a cabbage 6 feet high, the big broad leaves at the foot leading up to quite small leaves, and then, in the upper half of the plant, to fat pod-like seed vessels, at first fully 3 inches long, but gradually growing thinner and smaller until the spike ends in yellow flower buds.

In many cases it depends entirely upon the season whether the sepals of the withered flower remain intact to crown the ripened fruit, and whether the stipules at the base of the leaf stalks and the bracts at the axes of the flower stalks drop off or remain to ornament the joint. And we know how in exceptional seasons fruit trees that naturally blossom in the spring, and have done with it, begin to blossom again towards autumn whilst the ripe fruit is on the tree. All that makes a vast difference to the designer anxious to follow nature and keep close to her.

Some of the happiest inspirations in design are no more than the turning to account of a fortunate accident in nature. You notice, as you walk through a clearing in the woods, that an oak tree, cut down close to the roots, has sent out a ring of young shoots all round. It makes a garland of oak leaves on the ground. A few days later and you would seek in vain this living model for your oak wreath.

There is another point. To know a plant thoroughly you must compare it with others of its family. A botanical garden is, for this, always a revelation of fresh possibilities of design to the ornamentist whose knowledge of botany seldom goes much further than the look of things. He sees there, perhaps for the first time, rare varieties of plants he thought he knew quite well, and he finds he may, without

76. FRITILLARIES.
Drawn by G. Woolliscroft Rhead.

doing violence to nature, make them grow in a way which he would have thought quite contrary to all possibility in the species. There is, for example, to be found at Kew a Brazilian variety of the tobacco, with compact greenish-yellow blossoms, which indicates a treatment of the Nicotiana which its common varieties would never have suggested to the artist. And then what an object lesson it is merely to see in the same bed plants which you never thought of as belonging to one family, and how satisfactory to find your suspicions of relationship confirmed! The snake-shaped head of the common fritillary gives reason to imagine some connection between it and the crown imperial. When you see the Caucasian variety of the fritillary, with its three flowers on a stem, there is no doubt about it. The link between the two is unmistakable.

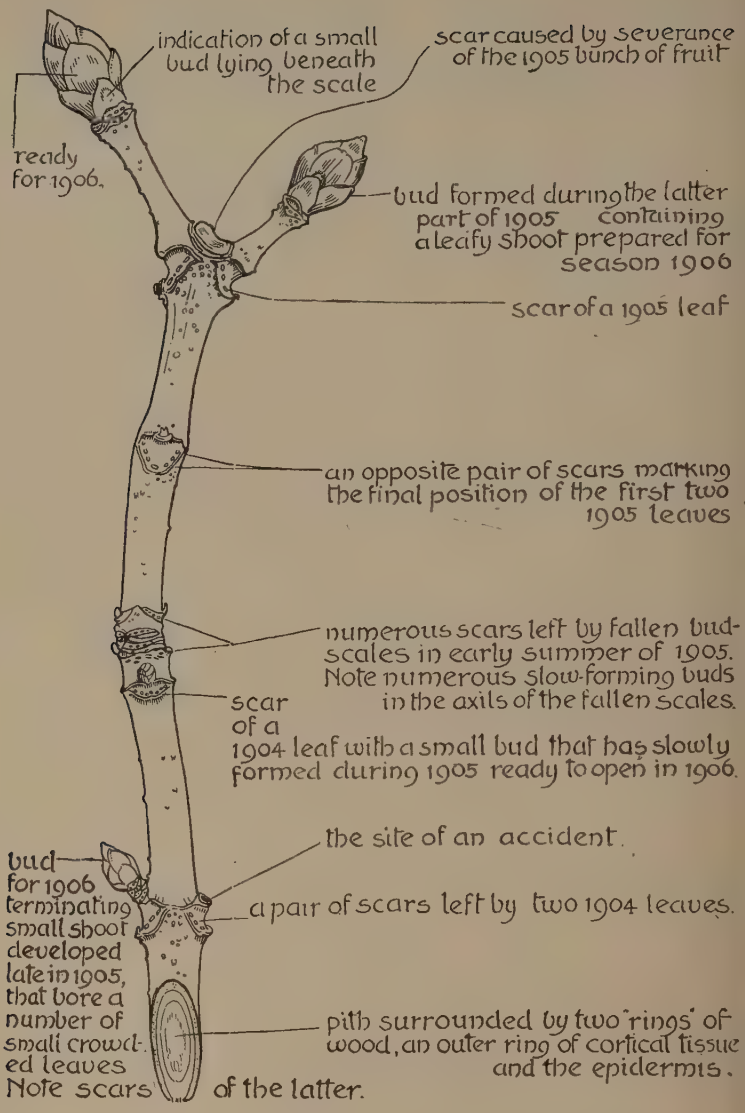
The behaviour of the plant has already been referred to. Most flowers, like the speedwell, open to the rays of the sun; a few, like the evening primrose, unfold only to the cool night breeze. Most plants uplift their leaves in thanks for rain or dew, and many droop in the heat of the day. The attitude of the clover leaves will tell you, for example, if it is morning or evening: it is a fact recognised by botanists that some leaves go to sleep—and they compose themselves, of course, accordingly. There is in all this many a hint for the ornamentist, and opportunity too of giving in design something over and above the strict measure of ornament.

XI. PLANT DRAWING.

THERE are theorists who maintain that anyone and every one can design ornament, that the designer is better untaught, and that children, as yet unsullied by contact with teaching, design better than those who have been taught the rudiments of the business. Is not the faculty of design a gift of the gods ?

Of course it is. The instinct must be there ; but it is of little avail without development and training, without hard study both of nature and design. The natural course of study is : beginning with natural form, (1) to study plants, and especially their growth and structure, to which end some slight knowledge of botany is helpful ; (2) to note the characteristics and the habits of individual plants, especially those which are suggestive of ornament ; (3) to study the treatment of plant form by others, in old work and in modern, comparing one rendering with another ; (4) to practise the translation of natural forms into ornament.

It is expedient to make, not one study of a plant, but a number of studies, and not all at once, but at various times of the year and in various years. One season (as has been said, p. 99) will bring out points in the growth not remarkable in another. It is not every year that fruit trees generally break out into flower again whilst the fruit is on the tree. A rainy season will develop growth rapidly enough to show the anatomy of the plant, which, when the leaves grow closely together, as they do in some plants, is ordinarily not easy to follow. And it is a mistake not to make a note of anything that strikes you in nature as


indication of a small bud lying beneath the scale
scar caused by severance of the 1905 bunch of fruit
ready for 1906.
bud formed during the latter part of 1905 containing a leafy shoot prepared for season 1906
scar of a 1905 leaf
an opposite pair of scars marking the final position of the first two 1905 leaves
numerous scars left by fallen bud-scales in early summer of 1905. Note numerous slow-forming buds in the axils of the fallen scales.
scar of a 1904 leaf with a small bud that has slowly formed during 1905 ready to open in 1906.
the site of an accident.
bud for 1906 terminating small shoot developed late in 1905, that bore a number of small crowded leaves Note scars of the latter.
a pair of scars left by two 1904 leaves.
pith surrounded by two "rings" of wood, an outer ring of cortical tissue and the epidermis.

77. BUDDING HORSE-CHESTNUT WITH ITS SCARS.

suggestive of ornament. You think you will remember it; but you won't, and the chance may not occur to you again. Choose, too, for study the things that mean something to you. The designer cannot too early begin to cultivate the selective faculty. In ornament it is half the battle.

It is not the study of botany that is here advised; that is a science apart. The order and family of a plant concern the ornamentist only in so far as they affect form and growth. He need do very little in the way of pulling flowers to pieces; he is relatively free of science, if only he will use his eyes. But he will use them to better purpose when he knows something. Not that he has any more occasion for exact scientific knowledge than a figure draughtsman for surgical anatomy; but he has just this much occasion for it, that it is knowledge which will make him quick to see.

The study of a horse-chestnut branch by Mr Wm. Cross (77) is just the botanical record of a man who happens to know how to draw; but, though made to show what nature study should be, it illustrates equally well the kind of drawing which a designer would find most useful. So do Miss Foord's drawings. In fact, executed as they were at my dictation and under my direction, they may be taken as very much my idea of what a designer's studies ought to be—though there is no one way of making drawings. The point is that they should be data to work on.

The kind of drawing that a designer should make is the kind that will be useful. A pictorial representation of the thing is of little use to him, nor a sketchy drawing, even though it should give something of the charm of natural growth. What he wants to know is more than the appearance of the growing plant, more than can be seen from any one point of view. He wants definite information as to the structure of the whole, the articulation of the stem, the turn of the leaves, the folding of the petals and so forth; as to the aspect of leaf and flower, budding and

open, in every stage of growth and from various points of view—all the facts of the case, in short, so that he may build up the plant for himself, and (with as little violence to nature as may be) make it conform to the conditions under which he has to work. It is out of facts that the fancies of the artist are woven.

This being so, the most useful drawings have more in common with a botanical than with a pictorial representation; there is more to be got from an old herbal than from modern flower paintings; but, in making his own drawings, an ornamentist will naturally pass over points which have only scientific interest, and will emphasise others on which a scientist lays little or no stress. The old herbalists, by the way, intent on economy of space, *designed* their plants to fit the proportions of the wood block (see p. 64).

In the method of his drawing the artist naturally departs from the dry botanical manner. He wants other facts than those with which science concerns itself. It will not do for him to leave out the grace, the delicacy, the vigour, the life, the individual trait, of a plant. It is not enough for him to know that it is a crucifer, that its leaves are lanceolate, and that they occur spirally round the stalk: he must record also the shape and proportion of leaves and petals, their texture, the way they droop on the stalk or spring up from it, and every little turn of growth distinguishing it from its family. He must know all the tricks and ways of a plant, if he is to treat it ornamentally without sacrificing the character and the beauty of it. And the more familiar he is with natural growth, the more readily he will perceive that even characteristics which, if you go to nature with preconceived ideas of beauty, may seem unfavourable to ornament—the stiff stem of the iris, for example (78)—want only the ornamentist to make them ornamental.

The worst use to which a designer can put his studies from nature is to have them before him when he is designing.

He may refer to them, as to nature itself, to refresh his memory, but it is only from memory that he can work freely. The facts of nature may easily prove an encumbrance to invention. The thing before his eyes is not malleable enough for his purpose; it is only the impression of it in his mind which accommodates itself readily enough to the conditions of the case. The necessary modification of a thing remembered *occurs* sometimes as though it were a matter of course. But it is only in our happiest moments

78. IRISES.

that that happens. In other moods the question of modification, its kind and its degree, has to be weighed and considered.

It is a popular misconception of design to suppose that a growing flower, a branch of a tree or other detail of natural growth, needs only to be cut short to fit a space, lopped of some leaves or supplied with a few more to fill up, and that, so trimmed, it makes ornament. Ornament is not arrived at in that way. It may appear as if that were how some of the more natural looking ornament—that of the Japanese, for example—were done; but it is not so. The designer of the most life-like floral ornament does not take a growing spray of blossom and copy it in his panel or lunette or spandrel. He knows the natural growth by heart, and, as he contemplates the panel, and considers how to occupy it, a spray comes into his mind shaped to the space. It is that imaginary spray which he throws upon it; and it is because it is imaginary, and not actual, that it fits its place and purpose so easily.

Once in a while a plant, as it grows, may by accident meet the case; more often it only promises to do so, and fails to keep its promise. As a rule, nature does not do the designer's work for him—he has to rely upon himself. He has therefore to store his mind with memories of nature, that at the right moment the right thing may recur to him; and it is all the more right in that his memory is not precisely accurate, but transforms the facts. Stalks as he remembers them grow as he wills them, leaves where he wants them, flowers and fruits just where they should come; and so his design shapes itself, by a process largely of memory, but not in the least of imitation.

This is very different from taking a natural model and reproducing it. What the designer has to do is, not to make a plant grow as in a particular case it did, or as it ever does, but as it might have done if he had had

the direction of its growth. In ornament he has the entire direction of it; and if he can't make it grow aright, he has yet to learn his trade of designer. Formal and free design are not two things, but two phases of the same thing.

It must not be forgotten that the study of "historic" ornament is no less necessary to the designer than the study of nature; it is, if anything, more necessary. Nature is always at hand, you can hardly help seeing it and learning from it; but you have there only the raw material of ornament; it is from ornament you learn the use to make of it. Natural form is the fuel for the fire. You must have enough of it to keep up the heat of design; though, if you heap on too many coals, you may choke it. Nature will not teach you so much as the rudiments of design, and the doctrine that it will alone suffice for the designer is a pernicious one. Nature begins to be useful only when you have some knowledge of the way ornament is evolved out of it.

All the while that the designer is studying leaves and flowers and fruits and growing things, he should be studying ornament also, noting in particular the way the masters treated those same natural forms upon which he relies for inspiration. It is the intention throughout this volume to help him to do that, to show him instances which shall set him on the track of others more to his individual purpose.

The only way to design with freedom is at first roughly to block in lines and masses as they occur. That leaves the designer free to follow the impulse of invention. Vague shapes roughly jotted down, to fulfil requirements of composition, will of themselves suggest not only leaves and flowers, but particular views of them.

The way, then, to design, as they say, "naturally," is to get the natural plant into your head, to know it thoroughly, its look and its habit; to know first of all the shape of

its buds, blossoms, leaves, fruits, stalks, and other features; to know, further, how they occur, the way they have of growing; and, finally, to build up a growth according to your wants. Whether or not you need refer to nature or to your studies, in order to perfect your work, will depend upon the degree of naturalism desired, and upon your powers of memory; but to have nature or studies from nature before your eyes whilst you are designing is no help but a hindrance.

XII. ORNAMENT, THE FINISHED PRODUCT OF DESIGN.

"THE purpose of ornament is to fulfil a decorative function." The words are Mr Lewis Day's. He maintains that this is its single objective; that poetry, literary meaning, symbolism may be present, but that they neither help nor hinder this primary function which should be decoration pure and simple; that, without a decorative purpose, the ornament fails.

It is true we cannot imagine certain things without the use of symbolism in the ornament: palaces without the royal arms; churches without religious symbols, the cross, the crescent, the many-headed serpent, the sacred tree, etc., but they must be used ornamentally, conformably to æsthetic laws. Poetry and literary meaning may be present, and they very often are, but they should be present only under the conditions laid down by art.

This book of floral forms, reproduced from drawings from nature, may be thought old-fashioned by the present generation. They may think it unnecessary in its insistence that pattern must be derived from nature. The students of to-day are used to more abstract designing, or to designs drawn from the works of man, such as lighthouses, buildings of all sorts and kinds, toys, scenes containing figures at work or at play. I think we must beware of condemning an elder book because it was written twenty years ago. This one was written in 1909, and was founded on an earlier book of similar character by the same author.

Each generation in turn is inclined to lay stress on some

half-forgotten æsthetic truth, to the partial oblivion of the other truths. For instance, the last generation emphasised construction, realism, and finish; the present generation emphasises pattern, balance, spacing, saying, "Let us go back to first principles, to the underlying essential first arrangement of the problem to be solved, or the space to be filled, and never mind about finish."

"It may be finished, but it has never been begun," was a criticism passed upon the work of a Victorian painter to me by a well-known artist in London, many years ago. This remark contained a truth. For no amount of finish on an ill-constructed, ill-thought-out design is of any avail. We may be glad to be reminded that study of form from the great teacher, nature, cannot be omitted, except at our peril. I would not go so far as to say that never has a good design been made without the study of nature. All things are possible in the hands of genius. But abstract design has usually to be abstracted from something. I think we have to store our minds by observation and the study of nature, whether it be floral growth, animal life, or the works of man, before we can turn our back on it all and invent an ordered pattern. William Morris was a great master of his craft—design. He invented ornament with a studied, well-remembered foundation of nature in his mind, and sometimes, to serve his end, which was decoration, he even used a deliberate distortion of nature. "The designer must be the Master of Nature. *His* master is Art."

Nature grows, in profusion, one tangle of disorderly beauty, the stronger elements suffocating the more fragile and sensitive. This must be brought into order by the mind of man, examined, classified, and used. Consciously or unconsciously, man has done this, from the civilisation known as Ur of the Chaldees down to the astonishing output of the Industrial Exhibition in Paris in A.D. 1925.

79. INLAY WORK FROM UR, 3500 B.C.

Reproduced from "Illustrated London News," 23rd June 1928, by permission of the British Museum.]

On the many objects found at Ur in the years 1927-28 are patterns suggested by the flowers and fruits, the animals and the human beings, amongst whom the Sumerians lived. Stylised bunches of pomegranates, fishes, the wild ass, bulls, and man. This was a finished art, accomplished possibly before the first dynasty of Egypt was born. A panel about 3500 B.C., made of lapis lazuli and shell with figures of the king and his army, full of observation and life, is drawn with a line so sensitive that we sometimes begin to wonder whether too much civilisation does not deprive us of the more sensitive artistic faculties (79).

Down all the ages we find this wealth of invention, time and the considered wisdom of the best minds being the only judges of its merit. We call it tradition. It is subject to change and modification. There is no other court of final appeal. Now what should we do about looking back to tradition ? We should, I think, try to avoid the two extremes, into one or other of which so many of us fall. We should neither make direct copies of past ornament in their entirety, without considering whether they are suitable for the work in hand or for our generation ; nor should we throw tradition overboard altogether. If we make the first mistake we shall not produce a living design. We might adapt something (for all ages have adapted patterns from their own past) ; we certainly ought to try and understand the sources from which that pattern came ; we ought to study those sources for ourselves. Why has it been accepted as good ? Probably because the ornament did not strain the medium in which it was carried out, did not, for example, try to make stone do what lace would do better ; also, no doubt, the decoration was subservient to the object decorated, and probably the lines and spaces were harmonious, rhythmic, and significant in terms of æsthetics. If we fall into the other extreme and throw over all tradition, we may waste a great deal of time in trying to solve an

insoluble problem, or we may impoverish our minds by refusing to study the inventions of past generations. This second error seems the lesser of the two evils, for we may arrive at a living discovery for ourselves which time may decide to be an addition to the world's thought. It is the risk all rebels and inventors take. We must not be surprised if we have to meet the rebel's fate! We may always hope for his, possible, posthumous glory! That the best minds will always express their own generation, the way it thinks, in the country to which they belong, is inevitable. We need not consider that, for they will do it unconsciously. In any case, we each have a problem to solve, if we are designers, that should be, for us, a new one.

I will try and give some examples of what I mean. In a number of countries in the eighteenth century, Chinese ideas and patterns were adopted; each country put on them its own note and made their own use of them. Spain used them and produced the shawls, which became quite Spanish, though adopted from and inspired by China. Lacquer again is Chinese in origin, but English, French, and Italian lacquer can be differentiated from each other, and all from Eastern lacquer.

Architecture has copied, borrowed, and adapted styles of construction and of ornament over and over again. It is interesting to listen to the verdict time has pronounced. A real invention has been achieved quite often, something that no one had thought of previously, usually born of some necessity of life as lived in that particular day. The problem in domestic architecture to-day is how to put the maximum of accommodation on to the minimum of ground space, so that the work of the world shall be done in the closest proximity by an immense number of workers, without losing air and light more than can possibly be avoided. In New York City the Americans with a long and narrow site, blocked by the harbour and the Atlantic Ocean at one

end, built tall, square buildings of thirty or forty storeys high on the spot where business was chiefly conducted near the mouths of the rivers, with the result that they form a most imposing and beautiful array of giant playthings to the beholder as he arrives by water. The people then discovered that, as more and more high buildings went up, light and air were curtailed to the dwellers in them and to the roadway of the street. They devised what are known as the zoning laws, ordaining that when a height has been reached two and a half times the width of the street, a first step-back must occur. These laws vary in different parts of the town. Sometimes when a tower is desired, as a finish to a tall building, the law is that it can only occupy one-fourth of the area of the whole building—that a certain amount of cubic feet of air must lie between the upper heights of one building and those on the opposite side of the street. Hugh Ferris has built some beautiful buildings within these limitations, making the lines of his construction do duty for other decoration, with great restraint and with great inventive power (80).

Needlecraft, which is the art of strengthening and enriching a material made of warp and weft threads, should be the decoration of a fabric and conform to these limitations. It is most successful when it treats the ornament flatly, when it does not try to imitate painting. A picture on a wall is something that we look into; it may, nay, should contain the third dimension. Needlecraft should only contain the third dimension very much curtailed. This applies to tapestry also, which is a covering for walls and should respect the wall. Needlecraft built up entirely of stitches, on a scaffolding of canvas, becomes a patterned fabric.

It is impossible to lay down fixed laws on a matter of taste, but as a rule decoration should not obscure the object decorated, any more than it should strain the medium. The façades of the baroque churches of Venice had another

problem to solve, how to enrich an ugly flat surface. The decision was to obscure it. The Alhambra Palace in Granada solved a similar problem by placing a wealth of very low relief stuccoed patterning all over the inner walls. It is immensely successful. But when we find direct imitation of lace patterns, only suitable to lace, around some of the big interior arches of the Alhambra, we begin to wonder if that is not going too far. Walls made of stucco to be enriched was the problem of the Moorish workman, stone being unprocurable for building. The French Gothic builders are judged to have touched the highest water mark in taste in Gothic architecture at Chartres Cathedral and in the church of Notre Dame in Paris. They did not over-decorate them; they did not obscure the eloquent design of the cathedral, they preserved the plastic, monumental quality of stone. The monastery church of the Cartuja in Granada, for all the beauty of the workmanship of its decoration, is often cited as the extreme example of the wrong use of material. The beautiful natural variation of colour in the marbles is obscured by these being cut up into innumerable shapes. Too many differing kinds of material are used; it produces on the beholder a sense of confusion and bewilderment. There is no repose anywhere.

The Industrial Exhibition of 1925 in Paris marks an epoch. It helped us to form an estimate of the trend of design in these present days. It was an exhibition designed to show us what had been accomplished since the Great War, though, of course, there had been an active movement to invent before the war began. The tradition of the work of William Morris, lost to a great extent in England, at any rate very little developed here after his death, was continued in France uninterruptedly. From France it spread to Central Europe, and I believe we can truly say that the mass of newly invented forms, which so astonished the world by their wealth in Paris, is his lineal descendant.

80. SKETCHES FOR SKY-SCRAPER DESIGNS.
A MASS ENVELOPE. *Sketches by Hugh Ferris.*

The needs of to-day are large buildings, often broken up into small homes, necessitating economy in the number and the shape of the things they can contain; immense public halls to hold vast crowds of people; immense railway termini; immense hotels. The war brought us all face to face with the elemental facts of existence, life and death. Thought became wider, nobler, larger in outlook. Art followed. Designs with large simple abstract forms arose, until now we have one portion of a form taking up the whole width of the material and "repeats" measuring three to four yards in length.

The "Home of the Future", we are told, is to contain the least possible amount of things; it is to have no corners, no dust traps, and much air and light. Public halls are to be decorated with ornament that will tell many yards distant. Attention has been directed to making one object not necessarily complete in itself as a beautiful object, but as one form in the whole scheme of a room. This is producing artist-designers of the whole decoration and contents of a room (81). The word "ensemblier" has been coined expressly to describe them: Porteneuve, René Lalique, Sue et Mare, E. J. Rühlmann, Jules Leleu, Maurice Dufrêne, and many others. Not that the ensemblier necessarily carries out every article, but he is responsible for the design of the room as a whole. Great attention has been paid to effective lighting and its fittings, to the bathing appliances, the heating apparatus, lifts, and above all to the economy of space and to the saving of labour. The lines in the design of the carpet are carried through into the furniture, walls, ceiling, window curtains, and lighting and heating apparatus. Tapestries tend to disappear, they are too costly to make, and the wall space of modern rooms is too limited. On the other hand, there is an increase in small embroidered panels and chair covers. The spending power of the world having lessened, a cheaper

process known as "sgraffito" provides a very suitable medium for wall decoration on plaster. This economic necessity has had a good effect; it has stimulated invention of simpler methods. In furniture the tendency is towards plain, unbroken surfaces, and to pieces without corners, to fit into the modern rounded rooms.

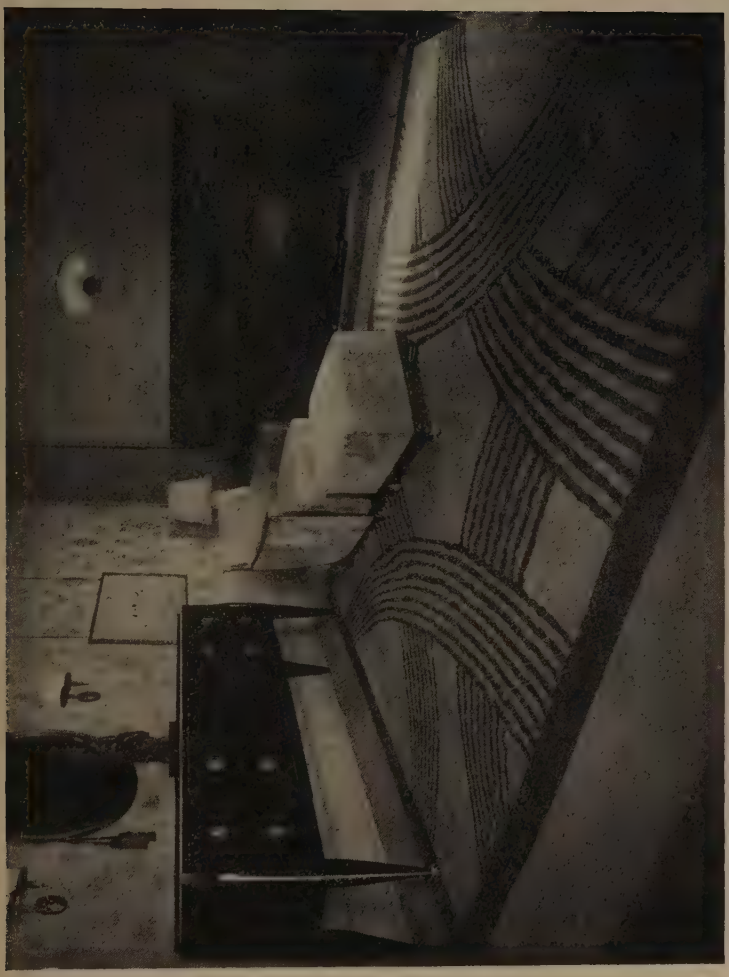
Carpets are still largely repetitions of past Oriental character. It is a good sign that many are clever adaptations and not mere copies of these designs. But to fit the new rooms and furniture, carpets of newer patterns are round, oblong, or of other unaccustomed shapes.

It is on textiles that we come to the greatest output. The display at the Paris Exhibition was bewildering and the wealth of invention unending. Sometimes the pattern on Lyons silks was so large that it was difficult to distinguish the repeat. Gold and silver was much used to enhance the colours.

I am afraid we have little enterprise in Britain to compare with France or the Central European countries. England being an island, tends to stand aloof from movements, but there are many hopeful signs that we are waking up. The work of the young students is beginning to show much greater daring. They still have not found themselves; they take their cue from Paris, but only timidly. Scenes of "play" or "market-day," as a repeat amongst running floral patterns, is very popular with them. I am afraid it has been better done in France. England has so much character that, when she has made up her mind to throw much of her tradition overboard, she may evolve a style, possibly similar to that of Paris of 1925, but surely of her own.

The design for a carpet by Duncan Grant deserves to be more widely known. It is bold and sweeping in its great curves of lions pursuing a bird, and expressive of to-day in the largeness and simplicity of its outlook.

The difficulty is that English manufacturers have all the



81. ROOM DESIGNED BY E. J. RÜHLMANN.

characteristics that distinguish Englishmen. They are slow to alter their machinery, they are desirous of testing, perhaps rightly, the new ideas that are much more quickly taken up on the Continent of Europe. Their designs show the influence of the geographical features of the British Isles: picturesque, homely, romantic islands, with soft, ill-defined outlines, producing, correspondingly, a romantic class of small design. The compensation for this lies in the great durability and beauty of workmanship. A three-pile velvet in Paris, by Sir Frank Warner, had no competitor.

We are not here concerned with the reasons for a certain poorness of appearance, a certain thinness pervading the general output. It may be due to mass production by machinery, or to the fact that the finer artists do not know what can be done by the machine. Therefore the manufacturer is unable to make use of their designs. What we are concerned with is to recall the half-forgotten truths common to all decoration, which I have endeavoured to reaffirm: to meet the future unafraid, to state the ideas, and to supply the needs with greater courage, not forgetting the laws, but only breaking them for the sake of a greater beauty which we may have the honour to find.

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